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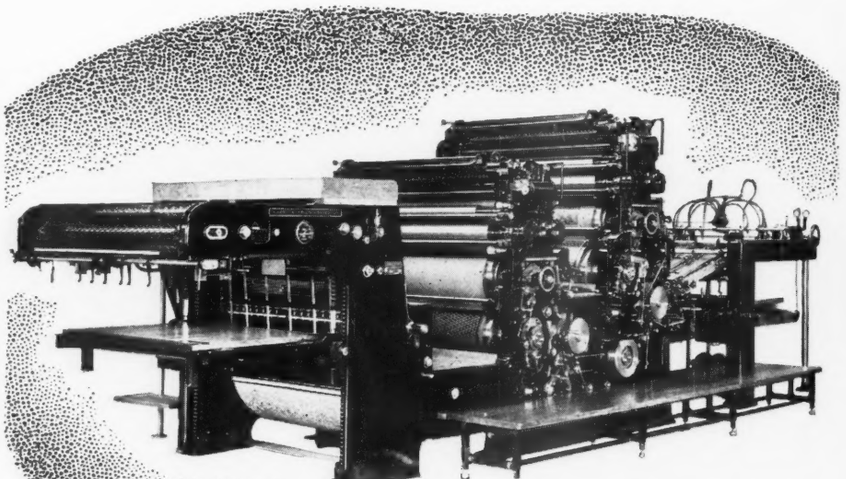

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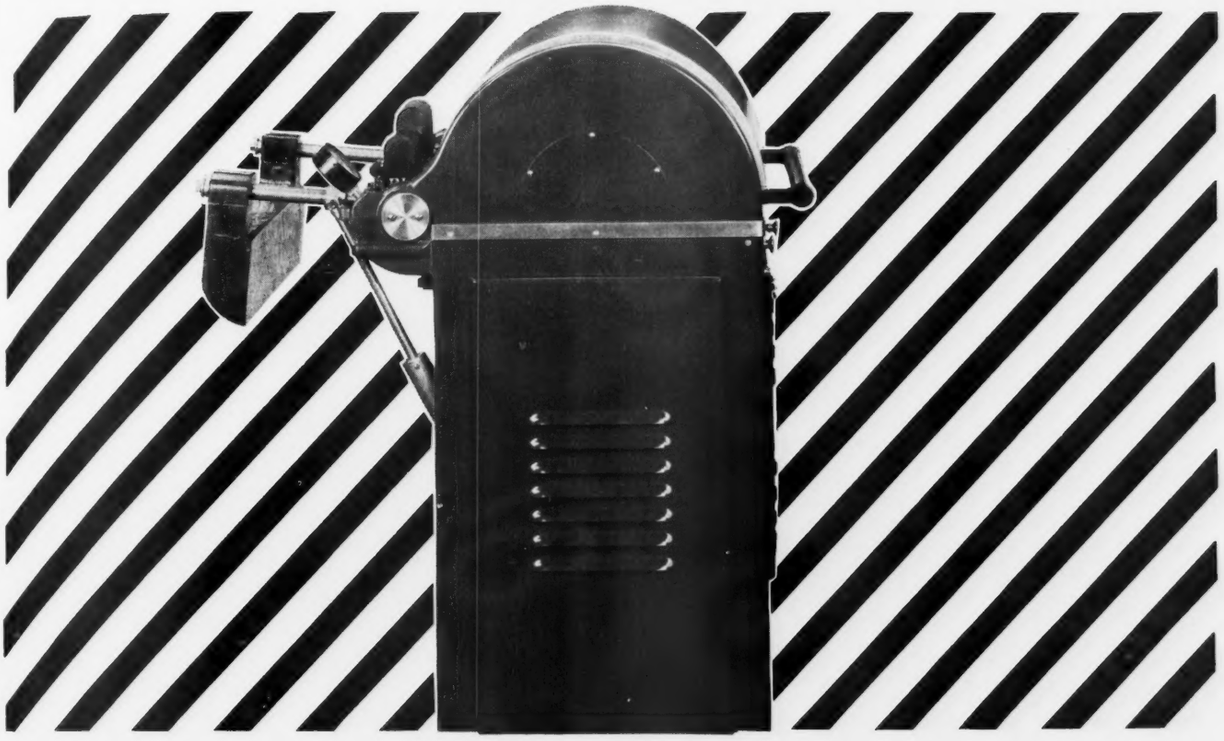

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1020 Crocker Street **Los Angeles, Calif.**

PRINTING INKS *utilizing the pH value of vehicles to produce multi-color printing with minimum number of plates, developed by Production Manager Albert Lengel of Oakland (Calif.) Tribune*

By MAC SINCLAIR

ALBERT L. Lengel, Production Manager of the Oakland (Calif.) *Tribune*, has been allowed a patent by the U. S. Patent Office. Incorporated are 15 claims, incidental to a color printing process. The process utilizes the pH (acid or alkaline) value of specially compounded printing inks to produce an endless variety of colors when one ink is superimposed upon another.

In actual practice, Mr. Lengel's process contemplates the use of two 60 line halftone plates one of which is superimposed over the other as in normal rotary press color printing. The first down color is determined by the reaction of the ink to the pH value of the paper upon which the halftone is printed. The second-down color which is superimposed over the first printed impression of the plate produces a range of colors according to the tonal values in the plate. That is, wherever the impression of the second plate superimposes upon the impression of the first plate, varying colors will appear according to the chemical reaction of the two inks as determined by the screen values of the second plate.

The inks are compounded in such a way that each ink vehicle is provided with a color pigment and a chemical which does not affect the pigment or maintains it at a certain color. However, compounded in the vehicle of another ink which is used in the same job of printing is a pigment which is affected by the chemical in the first vehicle and a chemical which affects the pigment of the first vehicle.

Vehicle No. 1, 60 line plate approximate percent tonal value	Vehicle No. 2, 60 line plate approximate percent tonal value	Color obtained by imposition
100	0	Red
90	10	Deep orange
80	20	Orange
70	30	Light orange
60	40	Yellowish orange
50	50	Lemon yellow
40	60	Canary yellow
30	70	Greenish yellow
20	80	Light bluish green
10	90	Greenish blue
0	100	Blue

This chart illustrates the color variations obtainable when printing from two 60-line screen halftone plates of the same subject, each having different tonal values, by the Lengel Color Printing Process. Colors are obtained chemically during the printing operation according to the pH value of specially compounded inks by superimposing two different screen value plates, one over the other. Plates are made from specially prepared copy by the artist who works from a standard color chart which has been prepared from known color reactions.

For color pigments, certain standard pigments or so-called "indicator dyes" are used. These are subject to change in color in the presence of certain chemicals. The use of oxidation or reduction dyes for obtaining color values under certain conditions also are included in Mr. Lengel's patent.

The indicator dyes, however, states the inventor, are more sensitive to chemical change and afford a greater variety of color change. Their value when compounded into the inks used in the process lies in their sensitiveness to changes in color according to the pH value of the solutions in which they are incorporated.

In discussing the urge behind his invention, Mr. Lengel explained that most newspaper printing plants are not equipped for executing run-of-paper color printing. In fact, a black press unit for printing one color in a regular daily edition cannot be spared in the average newspaper plant even if the firm were disposed to sell r. o. p. color in a ready market. With most of these papers, the printing of three r. o. p. colors and black is entirely out of the question.

If a newspaper plant is equipped with a four-unit press, and the press capacity is used most of the time in producing upwards of 32 black pages, it will be seen that one of the units could hardly be spared for color. Printing one color (red, for instance) would "kill" the 4-page (black ink) productive capacity of one unit for that edition.

Without the use of separable press units, one-half of one black unit would be required for each color to be printed in the paper. Using the present method of printing a paper we will assume that if three colors are to be printed, one-half of the black ink productive capacity of three units in this four-unit press would be killed, leaving only one unit of eight-page capacity for the printing of the black pages. It will be seen that the printing capacity of the other three units would be reduced by 50%. In case it is desired to print one halftone subject in color by the new Lengel color process in a regular daily edition in pressrooms where regular units cannot be spared, a separable printing unit can be mounted in the press especially for the purpose. In this way, the full black printing capacity of the four units can be maintained.

Possibilities of the process are such that it may be adapted to letterpress, offset-lith or gravure printing. Irrespective of the process to be used, the plates are employed to predetermine the colors by controlling the distribution of the ink and chemicals on the surface which is printed upon.

The plates are prepared from copy partially painted out and specially treated by the artist who works from a standard color chart prepared from known color reactions obtained as the result of experience in using the process. In preparing his copy of the picture to be reproduced the artist consults the color charts. In this way he prepares the copy to reproduce the desired tonal values. An extremely wide selection of colors is available to the artist by controlling the predetermined arrangement of the tonal values in the copy so that plates used in printing the subject will reproduce as desired.

To demonstrate the range of colors which may be secured by printing a 60-line halftone picture subject with two of the specially compounded inks, Mr. Lengel has prepared the accompanying table. The first ink will be called Vehicle No. 1 which contains an acid base. Vehicle No. 2 is alkaline in nature. As will be seen by consulting the table, if the first plate having 100% tonal value is printed upon news stock and the second plate having 0% tonal value is printed over the first down plate, the resultant color would be red. Likewise, if the second plate having 60% tonal value is superposed over the first printing of a 40% tonal value plate the resultant color would be canary yellow.

States Mr. Lengel: "The contents of the dyes in the vehicles may be varied considerably and the combination of tonal values may also be varied appreciably from that indicated in the accompanying chart. The number of combinations of dyes and tonal values and shades of color which may be produced are substantially unlimited."

To illustrate how one phase of chemical ink printing may be utilized in a daily newspaper, Mr. Lengel explained that a "hot" news picture comes into the editorial offices. The picture is passed through the photo-engraving department in the usual manner without art room treatment and the form containing the halftone picture (negative) goes to press as usual. In the meantime, a positive halftone plate (same subject, same size) is made and reaches the pressroom at the same time as the press plate containing the negative form of the picture. The positive engraving is placed on a

(*Continued on Page 46*)

One line or a thousand—cast direct from the copy—that's LUDLOW...

Because no newspaper composing room can predict its type requirements for tomorrow's ads, it must be prepared for the unpredictable.

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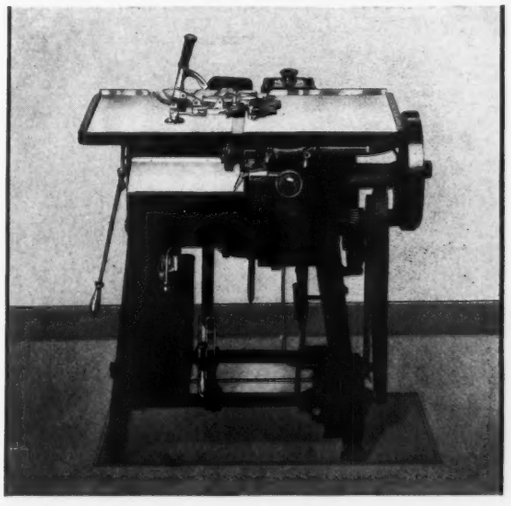

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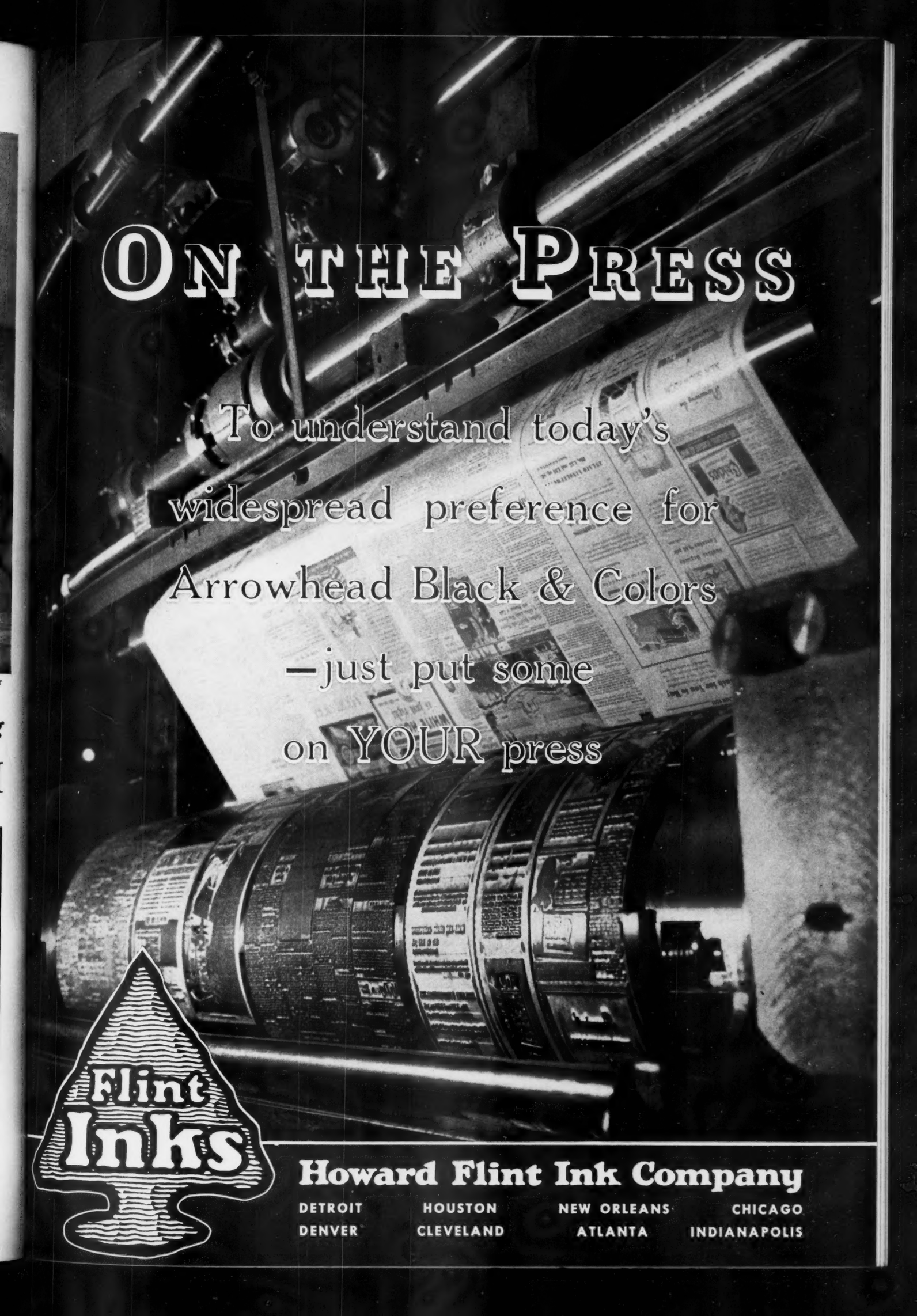
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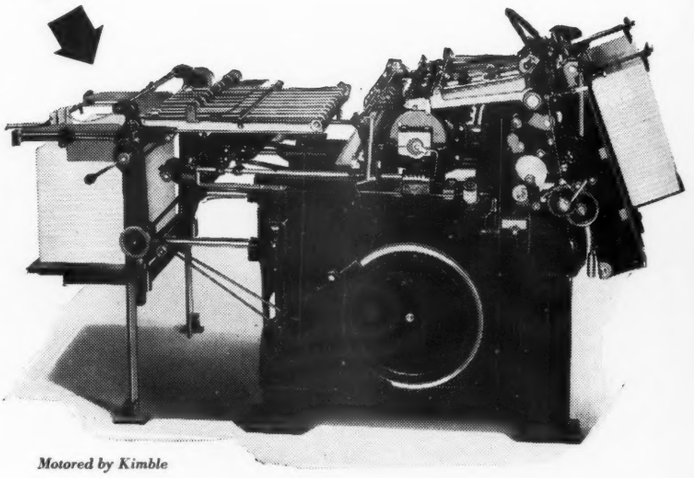

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IMPRESSION PETE

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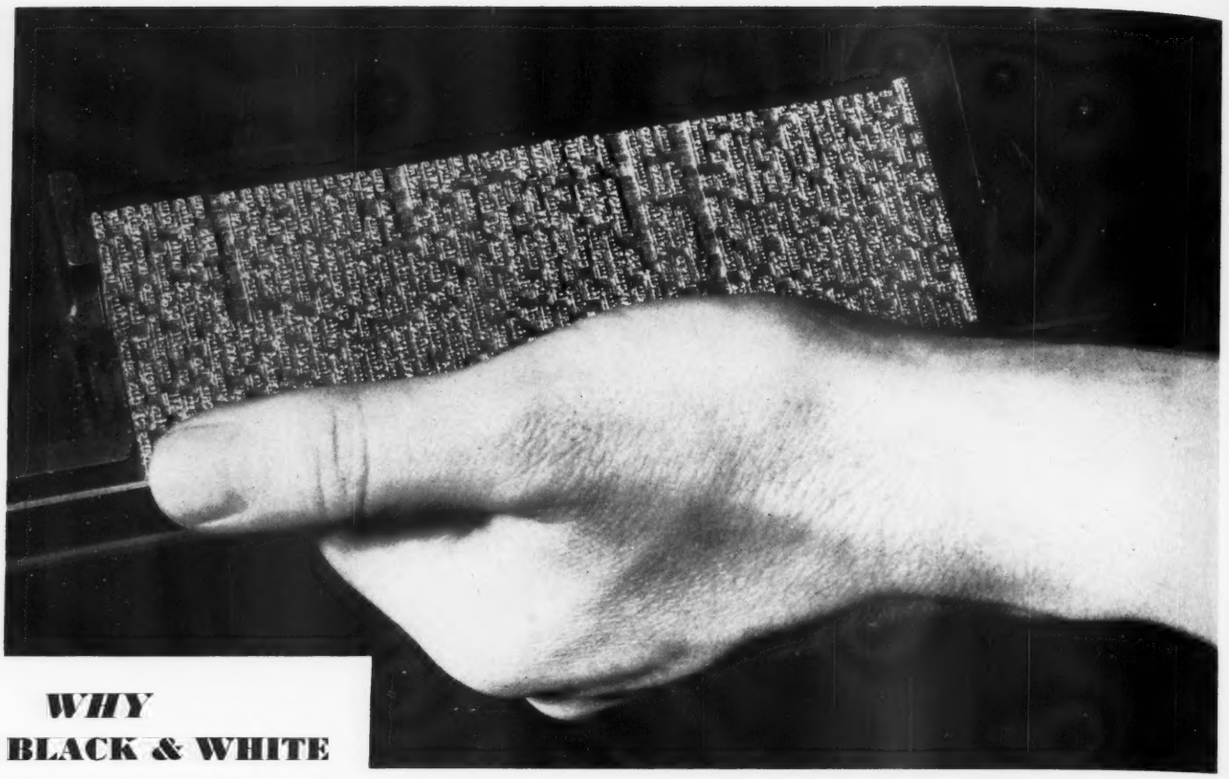

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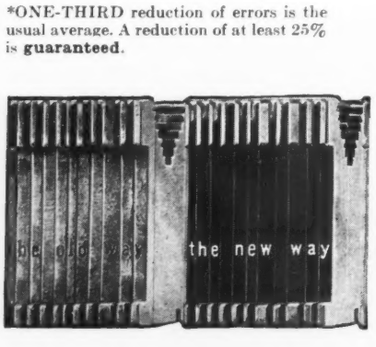

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MODERN RECONSTRUCTION, *based on thorough research of the printing equipment used by Johann Gutenberg, the inventor of printing with movable types just 500 years ago. At the left is the type case (the reader will notice the case is covered with cellophane for protection against dust). In the center is the wooden-screw press, printing a single page only at an impression. At the right will be seen the furnace for melting the metal used to cast the types. Since all paper was dampened before printing, completed sheets were hung up on cords across the printing office to dry.*

See Chemical Printing Ink article on Page 2

BUY NOW... *If Possible*

TWENTY billion dollars (or more) is a lot of money. Most of us can't comprehend how much it really is. Most of us do realize, however, that the spending of it for making battleships, guns, airplanes and other war equipment in American industry can upset normal manufacturing operations, including the making of printing equipment and supplies.

When Defense Program orders are threaded through the printing equipment manufacturing section of American Industry we commence to have an idea that the making of war materials may affect our own industry in such a way that we begin to realize how much freedom from interference we have had before.

The present situation is unusual. It's never happened before in American history. For this reason alone, most American people perhaps do not yet comprehend the far reaching effects Defense orders will have upon industry.

Translated into availability of new printing equipment and prompt shipment after ordering, it now seems that the Government's first order of business will affect those deliveries *for a long time to come.*

The answers received from a considerable number of important printing equipment manufacturers in reply to our letter of inquiry with respect to the probable effects of Government Defense orders, indicate that the Defense program will affect the normal manufacturing capacities of all of the manufacturers of heavier type printing equipment.[1]

A majority of the manufacturers are agreed that Government Defense requirements will have prior consideration in manufacturing operations in their plants.

A majority agree that fulfilling Defense program contracts will retard delivery of printing equipment.

Most manufacturers, either now working on Defense orders or who anticipate doing so, in replying to our letter of inquiry feel that the delays in completing orders for printing equipment will be due to causes beyond their control by reason of priority in Defense orders or because of inability

(*Continued Next Page*)

[1]In justice to three equipment makers who also replied to our letter of inquiry it is stated their equipment is such that they do not anticipate receiving Defense orders. One equipment maker stated his firm is protected for the ensuing 18 months on materials essential to his business by reason of long term contracts with suppliers of those materials.

to obtain materials for making the parts and supplies needed to complete the printing equipment orders.

All agree there will be an increase in labor and material costs.

Even though a printing equipment manufacturer does not engage in manufacturing items for the Defense program in the months to come, he will be subject to uncertainties in securing deliveries of materials from which to make his equipment, because the firms supplying those materials may be diverting the needed materials into Defense contracts.

An important manufacturer of capital goods asserts:

> "Prudent printers and publishers will take advantage of the present opportunity to buy equipment, for the prospect is that 1941 will see a curtailment of ordinary production in order to aid in the national Defense program. During the present period of preparation deliveries can be assured, but as the months pass delays will become more notable."

A manufacturer who has been engaged in Government work, states:

> ". . . from what I can learn in Washington there is a strong probability of priority being given to materials required in the Defense program and as newspaper presses are considered non-essential in time of war, there is a possibility that long delays will be involved in getting materials for the manufacture of our standard products."

Another writes:

> "The manufacturers of heavy or light equipment will be handicapped in both production and delivery because, in order to facilitate such a large scale production of war equipment it will be necessary to distribute materials by priority requisition. . . . Delivery of non-essential equipment, such as printing equipment, will be very uncertain. Just when we will arrive at this condition will depend very largely upon how quickly those in charge of procurement are able to get organized."

In spite of the present rather unusual conditions looming in the printing equipment and supplies manufacturing field as the result of the Government Defense program, no one wants to assert that a printer or a publisher ought to buy modern equipment now if it is impossible for him to find ways and means of paying for that equipment or financing its purchase in some legitimate way.

But for the executive who is in a position to purchase needed equipment or replace obsolete equipment and is not inclined to do so at the moment, we feel that he ought to place orders for the new equipment as soon as possible.

The president of one of America's largest printing equipment and supplies firms spoke words of wisdom when he stated "Many printers are putting off the purchase of capital goods and their reasons are that they do not know what is going to happen. This is a defeatist attitude and, in any business to which it is applied, that business will find in five years that its competitors will outstrip it and leave it in a very dangerous competitive position."

Duplication of machine parts and supplies is an important phase of printing production. Machine parts wear out and supplies must either be renewed or replaced. It is possible that inability to secure needed parts peculiar to certain machines may cause serious production embarrassments to mechanical executives. In the well supervised printing plant extra machine parts are kept in stock and are reordered immediately as used.

Now, if manufacturers find it necessary to delay prompt shipment by reason of prior delivery of Defense orders, it follows that repair parts for printing machinery will also be delayed. It would be a wise procedure for printing plant executives to stock up now to a reasonable extent on known wearables so that from the time a part is taken out of stock for use and the time when the replacement is received, production will not be halted.

Covering the situation up to the time its bulletin was published (Aug. 28) the A.N.P.A. Committee on Supplies advises as follows:

> There is ample evidence everywhere, . . . that newspapers must discontinue "hand-to-mouth" buying habits. . . . So, we must cease sending "Rush" orders. Depending on the article, orders should be placed for shipment from three weeks to three months after an order is entered.
>
> Certainly, every newspaper should have ample and adequate inventories of spare and repair parts for all essential machinery; especially presses, typesetting machines, stereotype machines and electrical equipment. No longer should we expect a manufacturer to be able to ship a repair part immediately upon receipt of a telegram, if that part is something that is subject to ordinary wear and tear and replacement. Within a few months, that manufacturer is more than likely to have a large part of his production at work on Government orders, the production schedule of which is not under his control.
>
> Every newspaper should keep a record of its inventories and see to it that everything used is regularly replaced as it is put into use and thus avoid running entirely out of supplies.
>
> Two essential (rubber and tin) and one semi-essential (Java sisal) items must be imported. We seem to have nothing to worry about about tin. Probably less than 20 per cent of the metal bought every year by newspapers comes from without the newspaper industry. We accumulate more than 80 per cent of our metal from our own dross. There is a tremendous excess supply of type metal in this country due to suspension or consolidation of newspapers and printing plants. In a tight spot, newspapers could probably find enough "dead" metal in type forms and cases to more than double the supply of metal which they think they have.
>
> There seems to be a good synthetic rubber product available today at reasonable prices that can satisfactorily replace any product used in our business made of natural rubber.
>
> There are many substitutes for sisal twine, running all the way from wire to cotton twine.

Additional Pictures of Craftsmen Attending the San Francisco Convention in August and some Western Coast Printing Plant Executives.

1—Here are (left to right): George Meredith, Meredith Monotype Composition Co., Portland, Ore.; Stanley Goodson, Instructor, Frank Wiggins Trade School, Los Angeles; Walter Brunner of B. F. Nelson Co., Minneapolis; Joseph Collins, of Rochester Monotype Composition Co., Rochester, N. Y.

2—Elmer H. Hostetler, Los Angeles Agency Manager for Intertype Corporation, and Production Manager Phil Chandler of the Los Angeles *Times*.

3—Superintendent Ed Samuel of A. S. Gilman, Inc., Cleveland, enjoys a nap aboard Union Pacific's Challenger en route to San Francisco Craftsmen's convention.

4—Educational Chairman of the International Craftsmen's Association is Douglas C. McMurtrie of Ludlow Typograph Co. This particular shot was taken by San Francisco's Henry Bettman during President McCaffrey's talk immediately following his installation as international president.

5—L. J. Herbert, General Superintendent of the Times-Mirror Printing & Binding House, San Francisco, snapped in his office by the editor's camera.

6—Craftsmen triplets from Detroit (a city near Cleveland). Left to right, they are: George Glazer, Detroit club's secretary; Bernard Sass, President, both of the Detroit Club and the Fifth District Conference; John Fisher, Fifth District's Secretary.

7—Harold Sanger, Chicago, and Jack L. Hagen, President of the Chicago Craftsmen's club.

8—Alfred Breitengross, Baltimore, brought with him the small working model of the Stephen Daye press (the original of which was shown last fall at the Fifth Educational Graphic Arts Exhibit, Grand Central Palace, New York. This press was made entirely of brass by Mr. Breitengross. It really prints. By profession, Mr. Breitengross is printing press instructor at St. Mary's Industrial School Press. He is also perennially appointed Sergeant-at-Arms at Craftsmen's conventions. A pocket-size edition himself, Mr. Breitengross's genial personality has endeared him to all Craftsmen attending the annual conventions.

9—Lester Neumann, M&L Typesetting & Electrotyping Co., Chicago, and Vice President Lee Augustine of Printing Machinery Co., Cincinnati, seem to have something in common—both appeared as speakers at clinics during the San Francisco convention.

10—Ivan Giusti, First Vice President and Milton Colton, San Francisco Club.

11—Here are three editors, well known to Craftsmen membership. Left to right: Charles McIntyre, Editor, *Pacific Printer and Publisher;* Haywood Hunt, Editor of *Share Your Knowledge Review;* Walter Schultz, Dallas, Texas, is an associate editor of *American Printer*.

EMPLOYMENT AND SERVICE

Employers, production and mechanical executives may insert notices in this department. Items may pertain to the following subjects: "Executive Wanted," "Association or Partnership Wanted," or "Position Wanted," readers referring to subjects of a personal nature such as obtaining information about addresses of executives, supplying copies of technical articles and magazines, patents for sale or requests for contacts for developing and/or financing of inventions.

Notices may be printed under the following regulations: First insertion (maximum six lines) is free of charge. All subsequent insertions of the same item subject to a charge of 75c per line in advance.

Address all communications with box number to *Printing Equipment Engineer*, 1276 West Third St., Cleveland, O.

SUPERINTENDENT OR MANAGER —A capable executive who has handled high grade production for many years wishes to affiliate with medium size plant. Has broad knowledge of composition, layout, estimating, billing, office routine, purchasing supplies. If sales department is well organized can carry through to delivery and billing. Available now. Reply Box 95.

PRINTING ENGINEER — 11 years present position, desires change due to business curtailment. Qualified in management, costs, production, printing, and paper conversion. Trained laboratory technician and paper analyst. Salary reasonable. Reply Box 96.

WANTED—If your plant has equipment on which continuous and counter-register forms could be produced, and if you are interested in discussing the matter with a sales organization having a radically improved principle, address, Box No. 94.

SALESMAN—Printing equipment or printing supplies. Wide acquaintance with printing trades in midwest and southwest territories. Desire permanent connection with leading manufacturer in the Graphic Arts field. Reply Box 97.

PRESSMAN — Working executive on cylinders — in one color and black and white presses. Locate anywhere. Reply Box 98.

COMPOSING ROOM FOREMAN — Now employed on daily. Good manager and efficient. Good linotype machinist, operator and floor man. Union. Can give you a paper on time each day. Married. 37. No liquor or tobacco. Can cut costs and produce results. Reply Box 99.

MACHINIST WANTED — Must be good; prefer one with executive ability by newspaper in one of South's most livable cities. Reply Box 100.

EXECUTIVE ¶s

Howard M. Hubbard resigned his position as Secretary-Treasurer of the Harris-Seybold-Potter Company of Cleveland, to become President and General Manager of the Greenfield Tap & Die Corporation, manufacturer of cutting tools for the metal working industries. He assumed his new duties at the company's executive offices in Greenfield, Massachusetts, on September 1.

R. Randolph Karch, formerly supervisor of the printing department, Rochester Athaeneum and Mechanics Institute, but now principal of Cincinnati's Printing High School, has been appointed Chairman of the International Craftsmen's Research Commission by President Frank McCaffrey.

Joseph H. (Pat) Lardin, assistant pressroom foreman, and for 32 years an employe of the Cleveland *Plain Dealer*, has been named pressroom superintendent by Production Manager Leon A. Link. The appointment was effective August 1.

William Brown, formerly of the rotogravure department of the Kansas City (Mo.) *Journal-Post* and more recently employed in the Des Moines *Register* and *Tribune* pressroom, is now mechanical superintendent of the Minneapolis (Minn.) *Star-Journal*. He succeeds H. L. Foster who recently accepted a similar position with the Minneapolis *Tribune*.

Joseph Thuringer, former Typographer for Bohme & Blinkmann, Inc., Cleveland, is now Superintendent of the Printing Plant, Eastman Kodak Company, Rochester, N. Y. Mr. Thuringer's creative typographic work has secured a considerable reputation for him.

Konkel Joins Curle

The Curle Manufacturing Company, Inc. of San Francisco, manufacturer of the Curle Slug Corrector, announces that Fred W. Konkel has joined the company's selling staff. He has been composing room foreman, plant superintendent and printing salesman, all of which has added to his knowledge of the industry.

For some fifteen years Mr. Konkel has made a study of composing room production problems and cost control. Mr. Konkel is well acquainted in the printing industry on the Pacific Coast.

Fifth District Craftsmen Attending the International Convention in San Francisco, August 4 to 8:

Fifth District Representative Ollie G. Fricke of the Dayton Craftsmen's Club, entertained the Fifth District delegates to the San Francisco International Convention at a breakfast on Wednesday morning, August 7 at the Palace Hotel. Among those who attended the breakfast but whose faces do not appear in the picture were: Immediate Past International President John C. Callahan, Cincinnati Club President Walter Sooy and Mac Sinclair, Editor Printing Equipment Engineer, Cleveland, who took the picture.

Left to right, front row: George Glazer, Detroit; Host Ollie G. Fricke (seated); Chas. B. Waddell, Grand Rapids. Second row, left to right: Ed Samuel, Cleveland; Irwin Deye, Cincinnati; Frank B. Gillam, Cleveland; John Fisher, Detroit, Fifth District Secretary; Lee Augustine, Cincinnati, Vice President, Printing Machinery Co. Third row, left to right: Eugene Long, Columbus; Fred J. Cutler, Pittsburgh; Bernard Sass, Fifth District President; R. G. Sutphin, Indianapolis; D. W. (Bill) Stock, Cleveland.

Publisher Jerome D. Barnum of the Syracuse (N. Y.) Post-Standard

MODERNIZATION *of building and equipment gives Syracuse (N.Y.) Post-Standard fine new home from which better printed papers are produced speedily*

By A. J. GORDON*

**Business Manager, Syracuse (N.Y.) Post-Standard*

IN August, The Syracuse (N.Y.) Morning *Post-Standard* moved into its fine, newly-modernized two-story building at the corner of East Fayette and Montgomery streets, Syracuse. Preparation of the *Post-Standard's* new home has been in progress for several months. Major changes in the building included new terra cotta exterior facing, a complete new interior with imposing new entrance to the building for the public, opening on an outer and wood-panelled inner lobby affording direct access to the second floor by an automatic electric elevator and by staircase. New mechanical equipment, the most important of which is a new Hoe Printing press, has been installed and is now in use in the *Post-Standard's* new home. Including the basement area, the available usable floor space in the building is about 50,000 sq. ft.

First Floor

The ground floor of the building has been greatly expanded by bridging over much of the area which was devoted to the pressroom in the old *Journal* building. At the left of the entrance, the visitor will find the business offices, with a suite of private offices along the Fayette Street side for the business manager, promotion manager, auditors and other executives. Beyond the business offices along Fayette Street will be found the circulation department. All of the advertising departments are concentrated at the right of the entrance. In the center of the rear portion of the building is situated the newly-constructed pressroom 27 ft. by 72 ft. extending through two stories with operating level on the ground or first floor.

In the inner rear quarter of the first floor area adjacent to the pressroom is the mailing room, to which papers are delivered by conveyor as they come from the press. The loading dock is at the rear. The mailing room section also houses the stencil-making and addressing machines and other equipment for paper mailing and distributing operations.

Locker and toilet rooms and a rest room for women have also been provided. In the front part of the building there is a conference room, providing room for 30 persons.

Second Floor

Going up by electric automatic elevator or by stairs to the second floor, the visitor finds himself in the second floor public lobby. On this floor are housed the editorial, composing and stereotype departments, the publisher's suite, a conference room, photographer's studio and locker, rest and wash rooms.

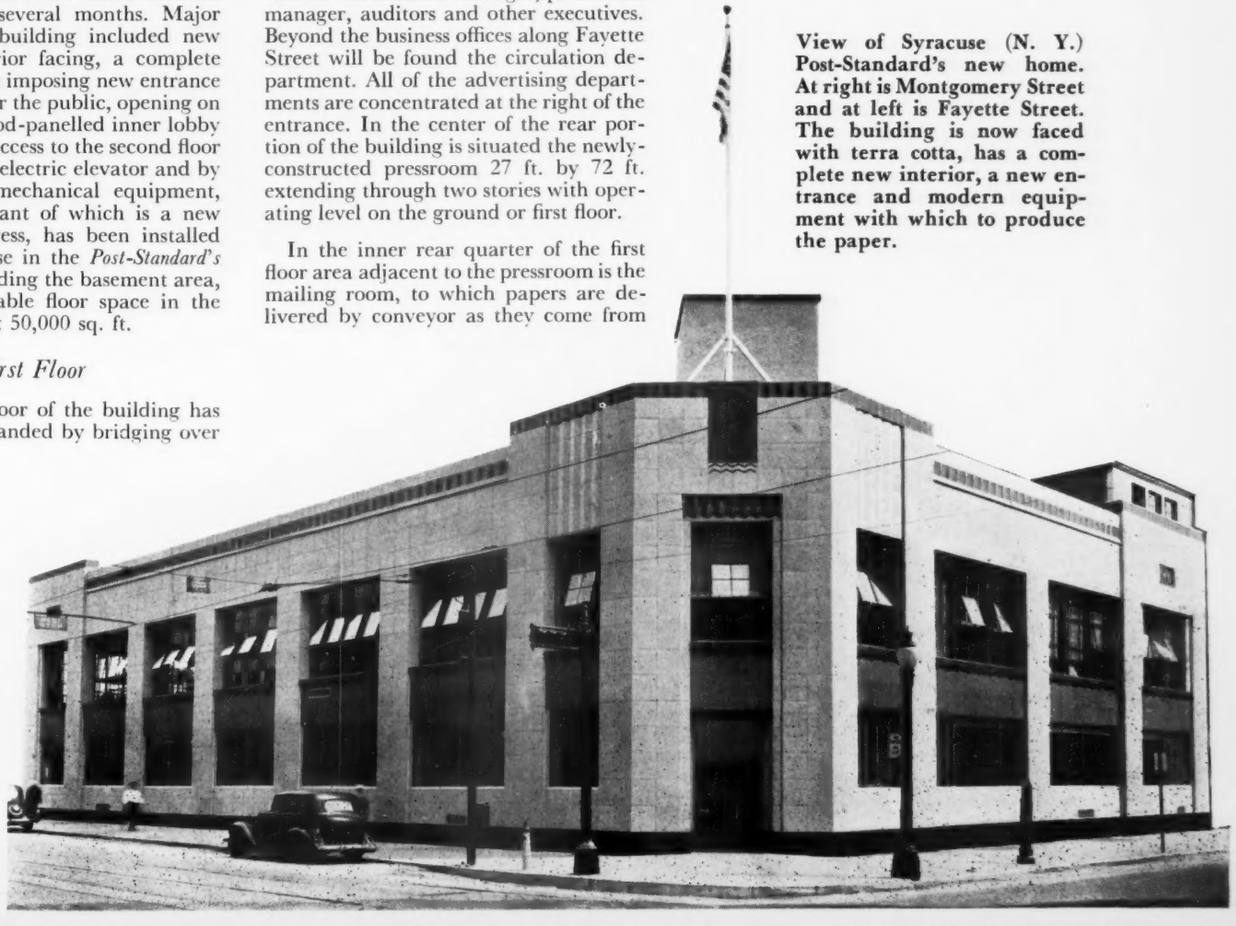
Direct access to the various departments is provided from the second floor lobby so the visitor will not be compelled to thread through a confusing trail of offices.

At the rear of the second floor with direct access from the city news room, are the composing and stereotype departments.

Basement

Down in the basement, where few people outside of newspaper employes ever penetrate, space has been provided for a large newsprint paper storage room, oil and ink tank room, paper baling room, boiler room and vault for *Post-Standard* files. From the basement level the pressroom extends upwardly two stories in height. Separate toilets, locker and shower rooms have been provided for pressroom employes.

There are two large storage rooms for rolls of newsprint paper, one room 54 by



View of Syracuse (N. Y.) Post-Standard's new home. At right is Montgomery Street and at left is Fayette Street. The building is now faced with terra cotta, has a complete new interior, a new entrance and modern equipment with which to produce the paper.

Arthur J. Gordon, Business Manager of the Syracuse (N. Y.) Post-Standard, supervised building operations and equipment installation.

60 ft. and the other 46 by 74 ft. with a total area of 6600 sq. ft. and a storage capacity of 400 rolls of paper weighing 278 T.

Each roll of paper is 6 ft. long and 3 ft. diam., and weighs approximately 1400 lbs.

Flooring

Careful consideration was given by *Post-Standard* executives to suitable flooring for the various departments. The lobby has been floored with marble. Toilet and washrooms have glazed tile wainscoting and terrazzo floors. The composing room and the stereotype rooms have wood block flooring. Jampol newsprint track system and Feralun non-slip flooring has been provided in the pressroom. Other floors through the building are of asphalt tile.

Heating and Ventilation

The building is steam-heated. The heat in each office or room is thermostatically controlled. Unit type ventilators are automatic in operation. When the temperature in a room rises above a certain point the ventilator draws in fresh air from the outdoors. When the temperature is lowered below the thermostat setting, heat is forced into the room. The average temperature of our building during the few weeks during July in which the building was occupied, has been approx. 78 deg., whereas the outdoor temperature was approx. 80 deg.

Lighting

Modern lighting facilities have been installed throughout the building. Fluorescent lighting is employed in the oval shaped lobby. These lights in combination with the photo-murals which adorn the walls have caused popular admiration by all visitors. In the composing room where seeing tasks are severe, general lighting is provided by glasteel diffusers. Lights throughout the department for local duty are fluorescent. Lighting units over the 10 ad cabinets are made up of four 3 ft. tubes in a continuous strip. There are five such strips. This treatment gives sufficient lights over two cabinets and at the side of each cabinet to work on one or two page trucks. The makeup stones are equipped with four strips 24 ft. long placed under overhead material banks or trays. Line-composing machines are supplied with individual 18 in. lights as are all saw-trimmers, foreman's desk and the proof-reading desks.

The adjustable composing machine lighting fixtures were supplied by Westinghouse.

Speaking of lighting generally in our composing room, there was some trepidation upon our part as to whether the operator could adjust his vision readily from the general lighting and the individual fluorescent lighting as he moved to and from the copy desk and his machine. We tried to compensate for the difference in the color rays by using a bulb of small wattage for general lighting purposes. Happily, we have not had a complaint from the operators in this respect.

The Composing Room

The *Post-Standard's* composing room is supervised by Superintendent James N. Johnson. The floor area is 68 ft. by 86 ft. The department has both overhead and side sun lighting for daytime operation. In the center of the composing room is the terminal of the pneumatic tube conveyor system installed by the Lamson Company, Inc., through which advertising and news copy is carried from the various departments to the composing room.

In this room are the 24 line-composing machines (12 Intertypes and 12 Linotypes) with new electrically heated metal pots (three of the machines are new) and at the south side of the room is the Monotype machine room, with two machines (one new) which cast strip and rule material.

(*Continued on Page 16*)

View in Syracuse (N. Y.) Post-Standard composing room. Here glasteel diffusers are used for general illumination and fluorescent tube lighting for localized seeing tasks. All of the line-composing machines have been supplied with electric metal pots. Composing Room Foreman James Johnson is pleased that the paper is now made up in 52 new steel chases furnished by R. Hoe & Co. Composing machine battery consists of 12 Intertypes and 12 Linotypes. Composing room is floored with maple block.

FORWARD in 'FORTY

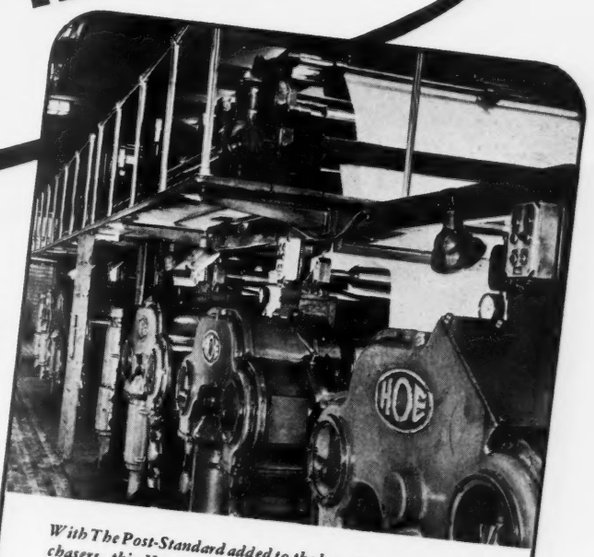
THE POST-STANDARD

FORWARD IN 'FORTY

...with

New Hoe Equipment

6 Hoe Arched-type Super-Production Units
2 Hoe Super-Production Folders
Cast Iron Substructure
Color Cylinder • Duo Ink Rails
Reversible Cylinder Arrangement



With The Post-Standard added to the long list of recent purchasers, this Hoe arched-type Super-Production Press finds ever increasing popularity among progressive publishers.

Guided by the slogan, "Forward in 'Forty", The Post-Standard of Syracuse is determined to realize even greater progress by the end of the current year. As you might expect, this progressive attitude extends to such vital facilities as pressroom equipment with the recent installation of a new Hoe arched-type Super-Production Press equipped with two Hoe Super-Production Folders and the auxiliary equipment listed above. Thus, The Post-Standard is now ready to meet increased production demands, to handle later schedules, to produce the finest quality of newspaper printing at the most economical cost. These benefits are by no means a new experience for The Post-Standard whose executives have relied on Hoe for many years to provide for them the latest improvements in modern pressroom equipment.

R. HOE & CO., Inc.

General Offices: 910 East 138th Street (at East River) New York, N. Y.

BOSTON **SAN FRANCISCO** **CHICAGO** **BIRMINGHAM**

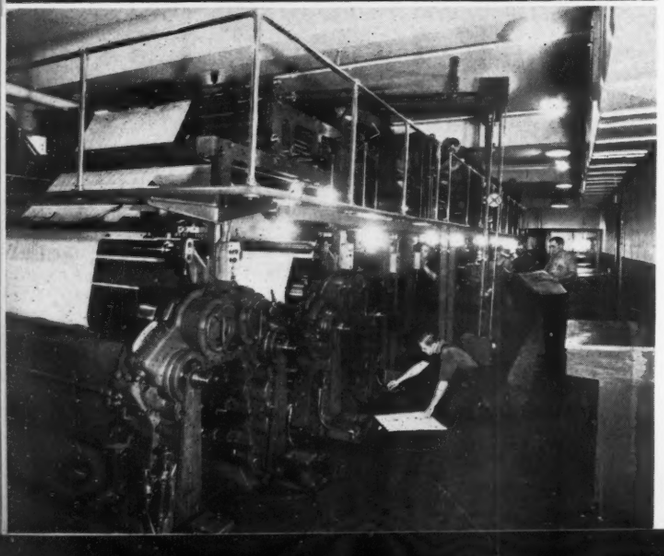
In the top picture are shown some of the Syracuse (N. Y.) Post-Standard's line-composing machines. Note the adjustable Westinghouse fluorescent keyboard operator's lamp on each machine, also the double-eye Margach-type feeder pigs.

In the second picture from the top is shown a section of the ad alley. Wood block flooring, fluorescent lamps and modern work tops for the compositors make this a pleasant place in which to work.

Center picture: A corner of the Monotype casting room in plant of Syracuse (N. Y.) Post-Standard.

Fourth picture from top shows section of new 6 unit Hoe press in the Post-Standard's pressroom. The pressman is about to place a plate on one of the cylinders. Note the Jampol plate conveyor which may be reversed for delivery of plates to the stereotype room after the edition is off. Note also means for hanging up compressed air hose at right.

In the bottom picture, the pressman is adjusting ink flow. Pressroom Superintendent Alex Kramer is casting his eagle eye over one of the papers to see that it is just right for "color." The Cutler-Hammer paper conveyor, opposite which Mr. Kramer stands, delivers papers to the mailing room.



At the east end is a glass-enclosed proofreaders' room, and off the composing room is the locker and rest room for men, with a fountain in the center where 12 men may wash at a time.

A feature of the composing room and the stereotyping room is the wood block floor, less tiring on the feet of men obliged to stand or walk much at their work and also an eliminator of noise.

The Stereotype Department

Adjoining the composing room on the so.-s.e. corner of the second floor is the stereotype department which is manned by 11 men supervised by Foreman Paul J. O'Connor. The equipment layout, we feel, provides a sense of centralized control, coordination of operation and continuity of effort.

Off the stereotyping room is the freight elevator, with an entrance from the court, serving all mechanical departments.

In the stereotyping room is a new 7 T. metal pot, with immersed gas burners, installed by the C. M. Kemp Manufacturing Company. There also are two new Pony Autoplates, with vacuum backs to pull the matrix into position, furnished by the Wood Newspaper Machinery Corporation.

The plate conveyor, which carries metal plates from the stereotyping room to the pressroom was made by the Jampol Company of New York. It is 75 ft. long and holds 25 plates at a time. There is an automatic stop which operates when a plate reaches the pressroom. The same conveyor, when reversed, returns used plates to the stereotyping room, where the metal is again melted for further use.

In the stereotyping room is a flat plate-shaving machine and a jigsaw for mortising cuts which came from R. Hoe & Company. There also is a flat router and a curved router, protected by a screen to catch flying chips of metal.

Another metal pot, of 6 T. capacity, is used for flat work and for pouring pigs or ingots of metal for use in the line-composing machines.

There is a new flat-casting box, water cooled, for full page work, which also came from R. Hoe & Company.

The Pressroom

We are proud of our pressroom equipment because we are now enabled to print papers at a rate impossible with our old discarded equipment. Provision for printing r. o. p. color up to four colors is also a feature which will enable us to keep pace with the trend toward color advertising in daily newspapers.

The pressroom is supervised by Alex Kramer. Of course, the main attraction in the pressroom is the new 6-unit Hoe Super-Production Arched-Type Newspaper Printing Press and the 2 Super-Production Double Former Folders and Ink Pumps. This new machine will enable the *Post-Standard* to print newspapers at the following running speeds:

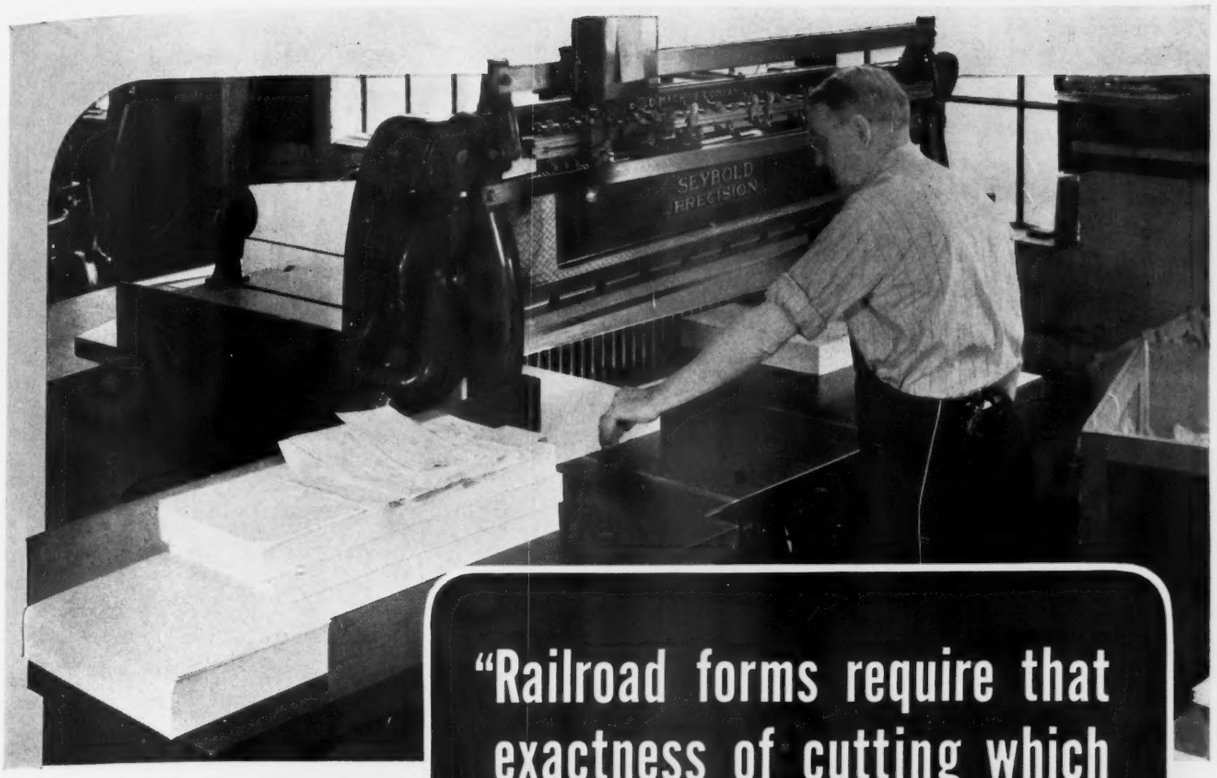
240,000 papers per hour of 4-6-8-10 or 12 pages
180,000 papers per hour of 14 or 16 pages
120,000 papers per hour of 18-20-22 or 24 pages
90,000 papers per hour of 26-28-30 or 32 pages
60,000 papers per hour of 36-40-44 or 48 pages

The entire press has a capacity of 96 plates. As a plate weighs about 44 lbs. the "fully dressed" press carries approximately 2 T. of stereotype metal.

The printing units are all equipped with the Pump System of Ink Distribution, one pump for each Plate Cylinder, by means of which the ink is pumped from a central supply tank directly to the Ink Distribution Cylinder.

Each pump consists of 32 small pumps that work in unison, and is mounted, with its controls, in a small box on the end of a long transverse bar or rail in a position outside of the press, permitting adjustments by the pressmen. Each rail contains 32 small brass pipes, connected to the 32 small pumps, through which the ink is conveyed to each column of the four 8-column plates on the plate cylinder.

There is a four-color unit permitting the use of four colors or less if desired on any page in the paper at any time.



"Railroad forms require that exactness of cutting which only Seybold's Auto Spacer can deliver,"

WHAT IS THE ELECTRIC AUTO SPACER?

This is R. G. Hentschel, operating the 50" Seybold Electric Auto Spacer in the Gilkey plant.

Leader of the Seybold line, this machine provides rapid, accurate spacing to any predetermined widths, as well as precision cutting. The back gauge moves forward automatically after each cut and a light flashes when the pile is ready for the next cut. Thus the machine itself sets the pace—not the operator. Unexcelled for multiple and repeat work, the Electric Auto Spacer is also an all-purpose machine, as the snap of a switch disengages the spacing mechanism and converts it instantly into a standard cutter with power-operated back gauge.

PRINTING, folding, cutting and trimming railroad forms call for precision accuracy from start to finish, because forms produced today frequently have to match exactly those printed years ago.

W. S. Gilkey Printing Company, leading railroad printers, of Cleveland, take pride in their good workmanship, are also proud of the fine equipment they have to turn out such uniformly satisfactory work.

In 1937 Gilkey bought a 50" Seybold Electric Auto Spacer—not only to safeguard the precision work of their expert workmen, but also to enable their cutter operators to handle an increased volume of production. After three years of experience with the Auto Spacer, Mr. C. H. Dolfuss, Gilkey's bindery foreman, says, "In our opinion, this Seybold Electric Spacer is the finest, fastest, most accurate cutting machine ever built. We simply couldn't get along without it."

Literally hundreds of printers, lithographers, and trade binderies echo Mr. Dolfuss' statement. Any establishment that has to do multiple and repeat cutting with accuracy and speed can profit greatly by installing the Seybold Electric Auto Spacer.

Seybold makes a power cutter to meet every need. Tell us *your* need when you write for a catalog.

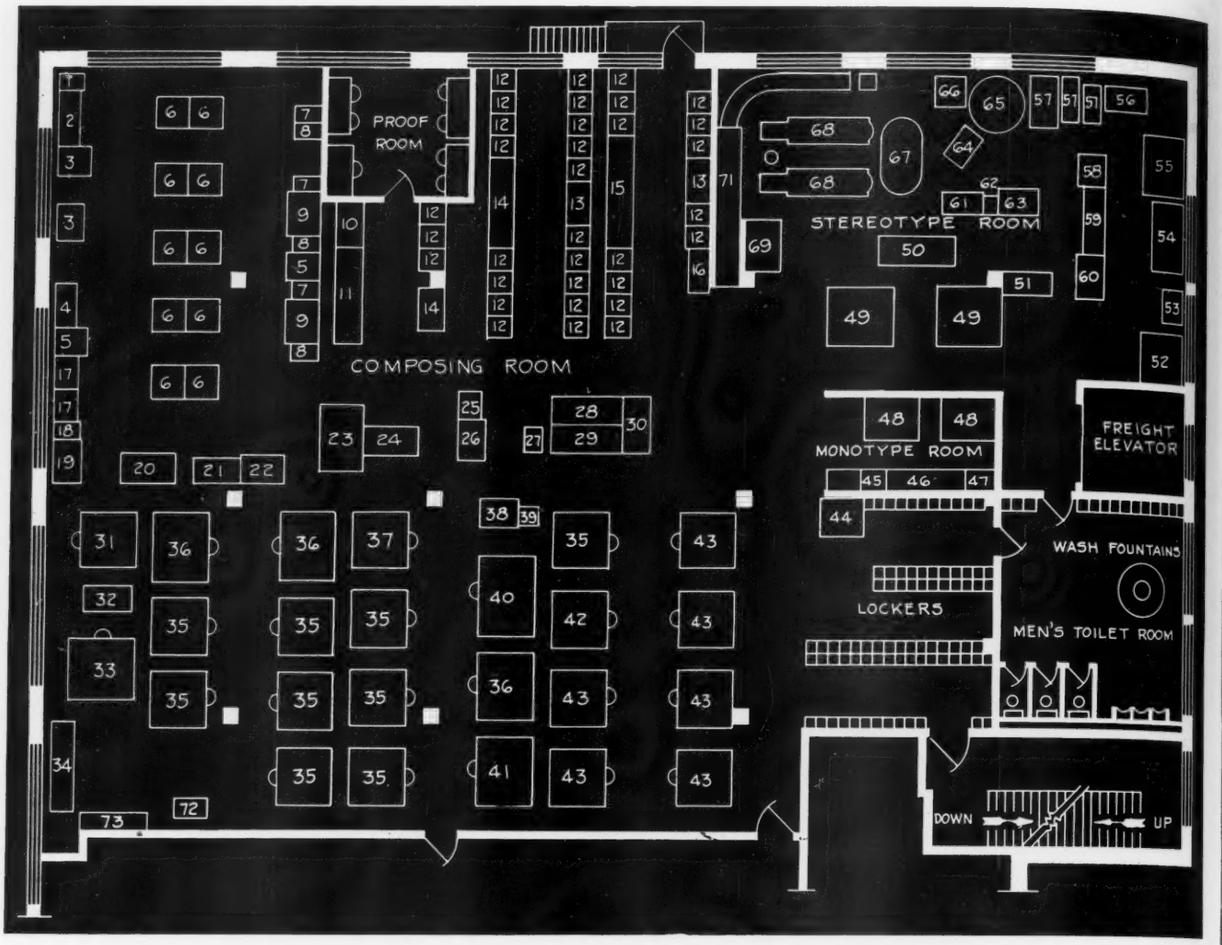
SEYBOLD DIVISION, Harris-Seybold-Potter Company
832 WASHINGTON STREET • DAYTON, OHIO

SEYBOLD *has the edge*

SEYBOLD SALES AND SERVICE:

NEW YORK: E. P. Lawson Company, Inc., 426-438 W. 33rd Street
CHICAGO: Chas. N. Stevens Co., Inc., 110-116 West Harrison Street
ATLANTA, GA.: Harris-Seybold Sales Corp., 120 Spring St., N. W.
DAYTON: Central Sales District, 832 Washington Street
SAN FRANCISCO, LOS ANGELES, SEATTLE: Harry W. Brintnall Co.
TORONTO, MONTREAL: Harris-Seybold-Potter (Canada) Limited
LONDON, ENGLAND: Smyth-Horne, Limited
LATIN AMERICA AND WEST INDIES: National Paper & Type Co., Inc.

PAPER CUTTERS • BOOK TRIMMERS • DIE PRESSES • KNIFE GRINDERS • DRILLS • WIRE STITCHERS



COMPOSING ROOM AND STEREOTYPE DEPARTMENT EQUIPMENT LAYOUT

Syracuse (N. Y.) Post-Standard — Floor area is 68 ft. by 86 ft.

1 Base Cabinet
2 Signature Cut Cabinet
3 Supply Cabinets
4 Miter Saw
5 Hammond Saw
6 Ad Cabinets
7 Left—Ludlow Cabinet
8 Right—Ludlow Cabinet
9 Ludlow Casters
10 Ad Stone
11 Ad Stone
12 Trucks
13 Stones
14 Stone
15 Stone
16 Sta-Hi Form File
17 Letter Boards
18 File Cabinet
19 Ad Makeup Desk
20 Ad Foreman's Desk
21 Rouse Band Saw
22 Ad Dump Stone
23 Vandercook Page Proof Press
24 Foreman's Desk
25 Head Cut Cabinet
26 Head Bank
27 Hammond Saw
28 Correction Bank
29 Dump Bank
30 Proof Press
31 Two-in-One Linotype
32 Split Magazine Rack
33 Linotype No. 22
34 Machinist's Bench
35 Model C Intertypes
36 Model C-SM Intertypes
37 Linotype No. 29
38 Copy Desk
39 Lamson Pneumatic Tube Station
40 Linotype No. 30
41 Linotype No. 26
42 Linotype Model K
43 Linotype No. 8
44 Chandler & Price Job Press
45 Monotype Cabinets
46 Monotype Storage
47 Table
48 Monotype Caster
STEREO DEPT.
49 R. Hoe & Co. Mat Molding Machines
50 Packing Out Bench
51 Mat Cabinet
52 Flat Work Router
53 Jig Saw and Drill
54 Flat Shaver
55 Saw and Trimmer
56 Flat Work Bench
57 Hoe Flat Casting Boxes
58 Flat Scorcher
59 Job Mounting Bench
60 Mat Bench
61 Scorcher
62 Rack
63 Sta-Hi Former
64 Pig Casting Box
65 Soft Metal Furnace
66 Material Bin
67 Kemp Stereotype Metal Furnace
68 Wood Pony Autoplates
69 Curved Router
70 Table
71 Jampol Plate Conveyor
72 Klean-O-Mat Machine
73 Cabinet

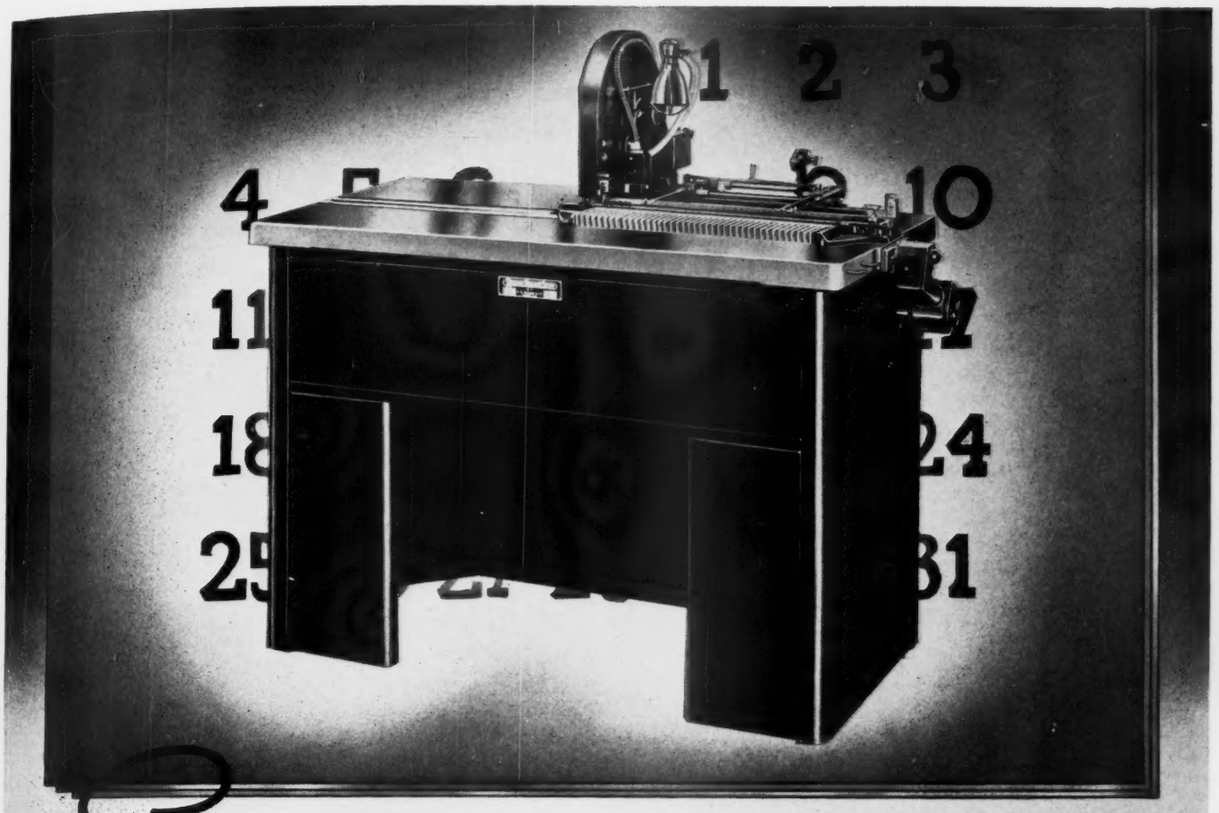
A special folder which is called the "Super-Production Internal Gear Folder" in which the motion is entirely rotary and at the same time continuous is a part of the press. Some idea of the speed of these folders can be obtained when it is stated that within the course of an hour, over 20 T. of paper made up of webs 6 ft. wide and totaling approximately 150 miles in length go through the press and folders to be turned into finished newspapers.

Safety Devices

Safety devices in printing machinery always interest mechanical executives. The *Post-Standard's* new press is fitted with many such devices which are enumerated as follows:

(1) All adjustments in the ink flow are made outside the press frames. (2) Feeding-in Pans are installed between all the printing cylinders so that it is practically impossible for any of the operators to get a hand or an arm crushed, when threading the web of paper between the cylinders. (3) In the passageways, through the press, screen guards are provided to prevent anyone from coming in contact with the revolving cylinders. (4) All gearing is covered with cast-iron guards. (5) The rotating slitter blades which are used to slit the webs have guards placed over them. (6) All keys are covered with guards and caps to prevent an operator

(*Continued on Page 20*)



Saves $100.00 IN TWO WEEKS WITH THE *Rouse* BAND SAW

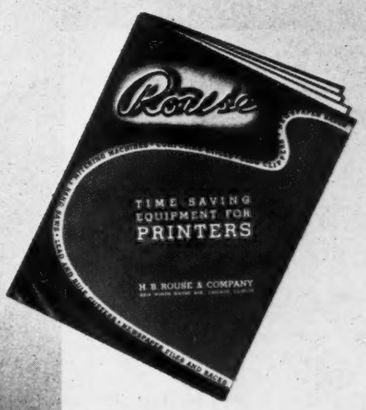
The Rouse BAND SAW, illustrated, cuts a full galley of slugs to variable measures in 35 seconds. It offers the most economical method of cutting spacing material.

Here is what one user says:

"I must admit that you sold us the most productive piece of equipment on the composing room floor when we installed the Rouse BAND SAW. The composition of the thirteen ad machines is handled in one-tenth of the time. Instead of the ad men standing in line waiting to use one of our three saws at the peak load hours they are all busy in composition. Our paper goes to press earlier and the saving in wages would amount to $100.00 in the last two weeks."

Originally, such savings were possible only in larger plants. NOW, SMALLER plants, having only one or two line casting machines, can make comparative savings with the lower priced No. 2 Rouse BAND SAW.

Whatever your composition equipment, you should have complete information on the Rouse BAND SAW. Just fill in and mail the coupon.



H. B. ROUSE & COMPANY
2216 NORTH WAYNE AVENUE, CHICAGO, ILLINOIS

WITHOUT OBLIGATION, please mail

☐ Circular on the No. 1 and No. 2 Rouse BAND SAWS.

☐ Complete Catalog of Rouse TIME SAVING EQUIPMENT.

Name_____

Address_____

Mechanical Executive Personnel of Syracuse (N. Y.) Post-Standard

J. N. Johnson	Fred Stauffer	Paul J. O'Connor	Alex Kramer
Composing Room Superintendent	Composing Machinist	Stereotype Foreman	Pressroom Superintendent

Moving Newspaper Equipment From Old to New Building

By A. J. GORDON*

**Business Manager, Syracuse (N. Y.)* Post-Standard.

THE technique employed in moving existing equipment to another production location without interrupting publishing schedules is always of interest to mechanical executives. Our story is as follows:

Upon the completion of its new building, the *Post-Standard* was confronted with the problem of transferring its composing and stereotype equipment from the sixth floor of the old plant to the second floor in the new location, an operation demanding the handling of loads up to 6100 lbs. under unusually difficult conditions and with the utmost in planning and speed. The problem had, of course, been anticipated, and the value of careful planning was strikingly illustrated when the entire job was completed without difficulty.

The old building was situated on a busy street but in spite of this, it was deemed advisable to lower the equipment directly over the street and onto waiting trucks. The building was of wood construction with bearing walls of brick and terra cotta. The sixth floor windows were arched, each about three feet wide and nine feet high to the base of the arch, and two feet six inches from the sill to the floor. Between windows were brick piers about one foot six inches wide.

A spot was selected central to the Intertype and Linotype machines, and two windows were carefully removed. The sills were then cut down to the sixth floor line and steel bracing was installed by setting up steel columns at each side of the opening, cutting out half of the intermediate pier and setting a lintel to take half of the wall load above, then, after thoroughly masoning this work in place, cutting out the other half of the pier and repeating the process and then removing the brick pier altogether. The result was a steel framed opening in the wall approximately 7 ft. 6 in. wide by 8 ft. 6 in. high. All machines were kept in operation during this preparatory work.

It was decided to handle the machines by an outrigger beam projecting from the roof some 12 ft. above, but the architects insisted that no load from the outrigger be borne by the wall itself, it being built largely of hollow ornamental terra cotta. Therefore, the beam was blocked up with cribbing from the roof just inside the line of this wall, and the back end held down by lashing it doubly to girders, one at the roof line and one at the sixth floor ceiling line. When a block and fall were rigged to the outward end of this beam, the apparatus was ready for use.

A similar rigging was installed on the new two story building but was much simpler to erect because of the greater strength of the floors, walls, and roof. A large steel window was left out in the new composing room temporarily.

The time of moving was set for Sunday morning at 1 o'clock, at which time a truck equipped with a power capstan was drawn upon the street somewhat off-center of the rigging above, and a rope was passed around the capstan, reeved through the block and fall, and back down into the opening through which the equipment was to pass. This truck acted as a power unit only, and another of a fleet of trucks was spotted directly below the outrigger to receive the machines as they were dropped. The front of the building was equipped with temporary lights to facilitate the work.

As the first machine was disconnected, placed on rollers, and a sling passed around it, another block and tackle was rigged from it and made fast to the rear wall of the composing room to prevent its too rapid movement toward the opening when power was applied from the truck below. Guy lines were also attached to the machine and dropped to handlers on the street. The capstan was started, the block and tackle on the sixth floor eased off, and the machine rolled toward the opening, finally standing clear of the building. From then it was only a matter of lowering to the truck on the street and keeping clear of projections on the building on the way down.

The procedure was reversed when the trucks arrived at the new building, the machines being landed on dollys and spotted in their exact locations as previously planned. Temporary service connections were made, magazines slipped into place and the machines were again ready for service. All of the equipment was handled in this manner except for small units, metal, etc., which were taken down to the trucks by elevator.

POST-STANDARD

(*Continued from Page 18*)

from having his clothing caught when the press is in motion. (7) All nipping and folding roller adjustments may be made by hand wheels outside the folder frames. (8) The knife box in the cutting cylinder has a locking feature to prevent flying out during operation. (9) Each press unit is protected by shear pin arrangements, which may be set to bear a given load. If the load is exceeded, the pin breaks immediately relieving the strain that would otherwise be passed on to other vital working parts. (10) The pressure between the plate and impression cylinders may be regulated by an eccentric adjustment while the press is in operation. This eliminates all guess work with regard to the setting of impression and allows the foreman to tell at a glance whether the impression is correct.

Press Drives and Controls

All electrical equipment in the pressroom was furnished by Cutler-Hammer Inc. and General Electric Company.

The equipment includes two press drives of 150 h.p. each; a control panel for each drive; pushbutton stations for finger-tip control of the press from any working point; electric cylinder brakes; modern safety devices for the protection of workmen and machines, and the conveyor system which carries the papers to the mailing room.

Each press drive has a small threading motor operating through a gear train to drive the press at low speeds, and a large motor for driving the press at operating speeds. A magnetic clutch between the two motors automatically transfers the loads from one motor to the other without jerk or jar. This prevents breakage of the paper web, preserves register, and prevents undue strains on the machine parts.

(*Continued on Page 48*)

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MODIFYING PRESSES *for newspaper printing with cold-set ink — PM uses gas-fired boilers and closed pressure-water-heating system*

By HARRY W. SMITH, Jr.*

*American Gas Association, Industrial Gas Section, New York, N. Y.

PRINTING with "cold-set" ink — ink delivered *as a solid* but handled hot and molten right up to the instant it is transferred from the type to "freeze" on the paper — is so new that its debut into the high society of graphic arts processes dates from a report presented before the Technical Association of the Pulp and Paper Industry as recently as last February 21.[1] This being the case, the writer feels the printing and publishing fraternity will want to know the engineering problems it must face incidental to the adaptation of the cold-set process to this-or-that type of business.

J. M. Huber, Inc., manufactures the new solid ink under the trade name of Velo. Further, Frank G. Breyer of Singmaster & Breyer (Consulting Chemical Engineers for J. M. Huber, and co-inventors of the process) has given, both in the trade press[2] and in the TAPPI paper previously noted, rather complete descriptions of the process.

In barest outline, the solid ink is melted at 200 deg. F or above and maintained at this temperature through all ink conduits, fountains or ink pumps, and ink rails. The ink cylinder is heated to keep the ink sufficiently fluid to distribute readily and pass over the intermediate rolls onto the plate cylinder *as a liquid*. The plate cylinder is also heated so that the plates are kept hot by contact and the ink maintained at 200 deg. F or better, up to the very instant it touches the relatively colder paper and "freezes" thereon with virtually no penetration.

Water-Heating System

Obviously, the chief job in adapting any press to cold-set printing involves the installation of means for: melting the ink; keeping it sufficiently molten to flow easily through all conduits, fountains, pumps, rails etc.; and heating the ink cylinders and plate cylinders. At the Brooklyn *Daily Eagle* where *PM's* 250,000 plus copies are printed on two modified 4-unit Super-production Hoe Presses, a gas-fired water heater of somewhat special design delivers 800 gal. per min. of hot water at 228 deg. F and 10 lbs. per sq. in. pressure to the heating jackets of: the various ink pumps, each ink rail, and each ink cylinder. Another gas-fired water heater of identical design delivers a similar quantity of water at 250 deg. F. and 16 lbs. per sq. in. pressure to the heating jackets of all the ink-melting-tanks and ink lines running therefrom to the press, as well as to the various plate cylinders—the higher temperature water being required at these locations in the interest of speed in ink melting and (in the case of the plate cylinder) in view of the fact that the surface of this cylinder does not heat the ink directly, but merely heats the ribbed stereotype plates which in turn must be hot enough to keep the ink transferred to them at the proper temperature and fluidity.

Details of the System

Because of the unusual requirements of this pressure water heating system, three specially-designed 25 h.p. boilers by Mears-Kane-Ofeldt were adapted. One is shown in Fig. 2. Each of the three is fired by nine bar-burners capable of burning a total of 2400 cu. ft. of 540 Btu gas per hr. when full-on—and is insulated with magnesia block covered with finish mix. The vertical fire-tubes are so arranged (in special pattern) that the mercury bulb elements of the temperature controls can penetrate to the center of each unit; and (in view of the tremendous rate of water circulation through each unit) double inlet and outlet connections are provided so that the water will not "short-circuit" (as might occur with a conventional single lower inlet and single upper outlet) and cause inadequate circulation around fire-tubes. Fig. 3 shows the Y-branches which provide two diametrically opposite connections for both the inlet water (bottom) and the outlet water (top). Motor-driven pumps accomplish the necessary rate of circulation.

The three units are all interconnected so that any two may supply either of the two separate hot-water-circulating systems serving the pressroom—both systems being closed, of course. As now operating, each system circulates 800 gal. per min. and is handled by only one unit —the center unit being a spare ready to throw into either system at a moment's notice. At the top of each closed system, high under the roof, is a heavily insulated air-cushion expansion tank (right, rear, Fig. 4) to compensate for any pressure variations in the system. This also allows for accumulation and escape of air from make-up water.

The control system represents the very latest in both precision and safety for water heating installations operated at temperatures above 212 deg. F.—and, to the best knowledge of the writer, is the first of its kind. It provides push-button ignition by a safety flame pilot—10,000 v. to ignite the pilot, after which the potential drops to 2,300 v. and the circuit continues to arc *only if the pilot is on*, this flow of current actuating a double-relay system to open the main gas valve. The relays, in turn, are connected to an on-and-off Partlow temperature-indicator and limit-control with maximum and minimum stops. This is a safety feature, not the main temperature control, although it could be so used in an emergency. As an additional safety factor there is a raw gas pilot system entirely independent from the electric pilot system.

The main control is *modulating*—and entirely separate from the ignition system. Thus gas is used only in proportion to the heat required in the pressroom, no fuel for standby or maintenance being wasted, and temperature control is precisely constant (see actual temperature chart, Fig. 5).

Still another safety feature is a dump valve at the low point of each circulating water system, actuated by a break-glass switch in the pressroom and interconnected to a main gas shut-off valve. Further, should a pump fail, a relay would both set off an alarm in the head pressman's office and close the main gas line. Relief valves, gauges, etc. as required by safety codes are, of course, provided.

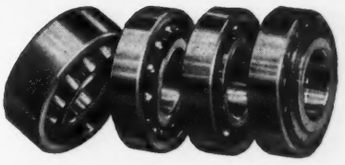
Most important of all, however, are the two closed hot water systems beyond the boilers and supplying heat (in the form of hot water) where it is needed in cold-set printing. The 250 deg. F. system is the most circuitous. It serves the jacket of the ¼ in. welded-steel ink-melting tank (foreground, Fig. 4) which is at least 10 ft. above the topmost point of the presses and is 28 in. deep by 49 in. long by 24 in. wide. This tank has a pitched bottom and a central baffle. Both the baffle, the bottom and all sides are jacketed with the hot water under 16 lbs. pressure, and insulated heavily with magnesia. Also served are three smaller ink-melting tanks for colors other than black.

This same 250 deg. F. system serves the jackets for all the ink lines (½ in. or ¾ in. brass-pipe lines completely and centrally encased in welded 2 in. water line, even to the extent of drop lines, valves, et al.). No leakage or possibility thereof is permissible in view of the temperature and pressure of the water, and it is advised that as much of the ink-line jacketing as possible, be pre-welded. Fig. 6 shows one unit of one press—the top horizontal white line being the main ink supply header—and jacketed ink drop lines and valves being visible and connected to it at three points.

[1] *The Velo Cold Set Process of Printing and Its Relationship to the Paper*, Frank G. Breyer, Singmaster & Breyer, 420 Lexington Avenue, New York, N. Y.

See also *Cold Setting Inks*, by Frank G. Breyer, p. 13, March 1940, *Printing Equipment Engineer*.

[2] See March and June 1940 issues of *Printing Equipment Engineer*.



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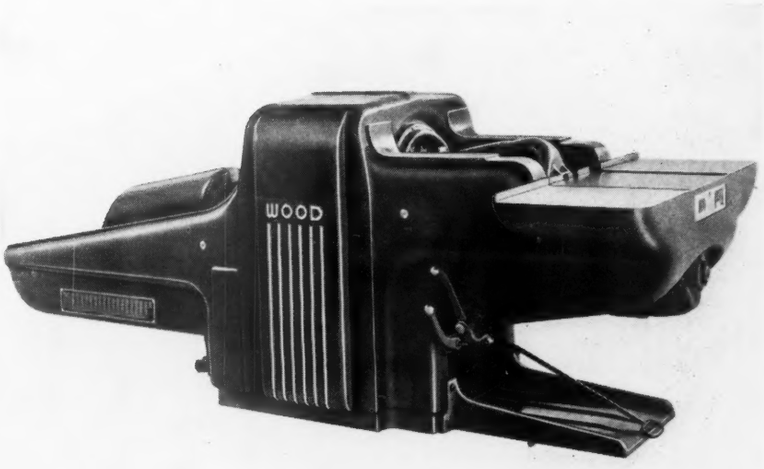

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Fig. 1 — Velo-printed pages leaving the printing unit dry instantaneously on this Hoe press in plant of the Brooklyn Daily Eagle where 250,000 plus copies of PM are printed each publication day.

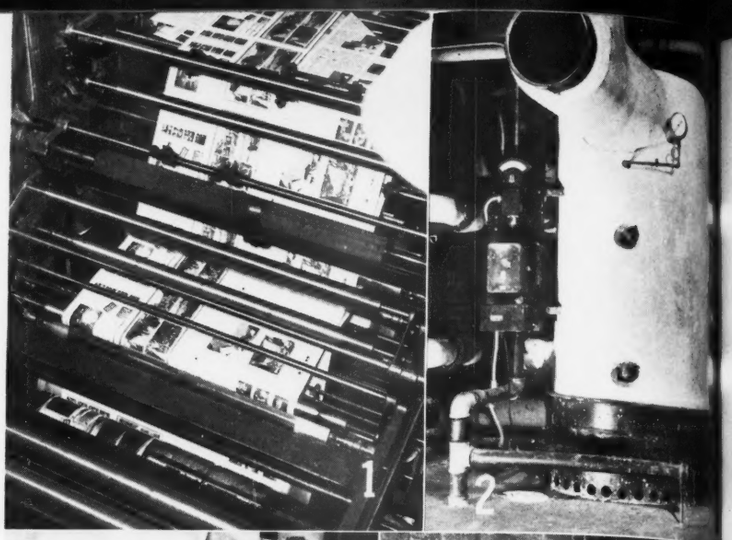
Fig. 2 — Three specially designed 25 h.p. boilers (one of which is shown here) are used in connection with the pressure water heating system in the Brooklyn Daily Eagle plant for liquefying Velo cold-set ink with which PM is printed. The boilers, made by Mears-Kane-Ofeldt, were adapted to the unusual requirements of this installation.

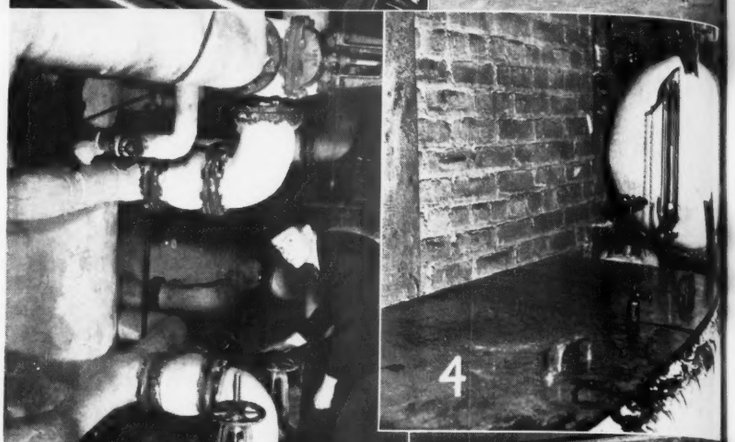
Fig. 3 — Here are shown the boiler Y-branches for providing two diametrically opposite connections for both the inlet water (bottom) and the outlet water (top). Motor-driven pumps provide the necessary rate of circulation. Each pressure-water-heating system circulates 800 gal. per min.

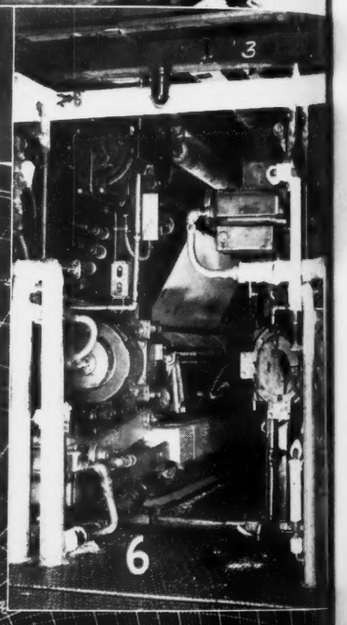
Fig. 4 — At the top of each closed system, high under the roof, is a heavily insulated air cushion expansion tank (right rear) to compensate for any variations in the water pressure. In foreground is the jacketed ¼ in. welded steel ink melting tank, 10 ft. above the topmost point of the presses.

Fig. 5 — Temperature control is precisely constant. The main control is modulating and entirely separate from the ignition system. Gas is used only in proportion to the heat required in the pressroom.

Fig. 6 — One of the press units in the Brooklyn Daily Eagle plant fitted for printing PM by the Velo Cold-Set Ink process. At top is shown the main ink supply header. The jacketed ink drop lines and valves are visible and are connected to the header at three points. The 250 deg. F. system supplies plate cylinders (left center) through axial connections. No more than 4 deg. F. water temperature is lost across the press.



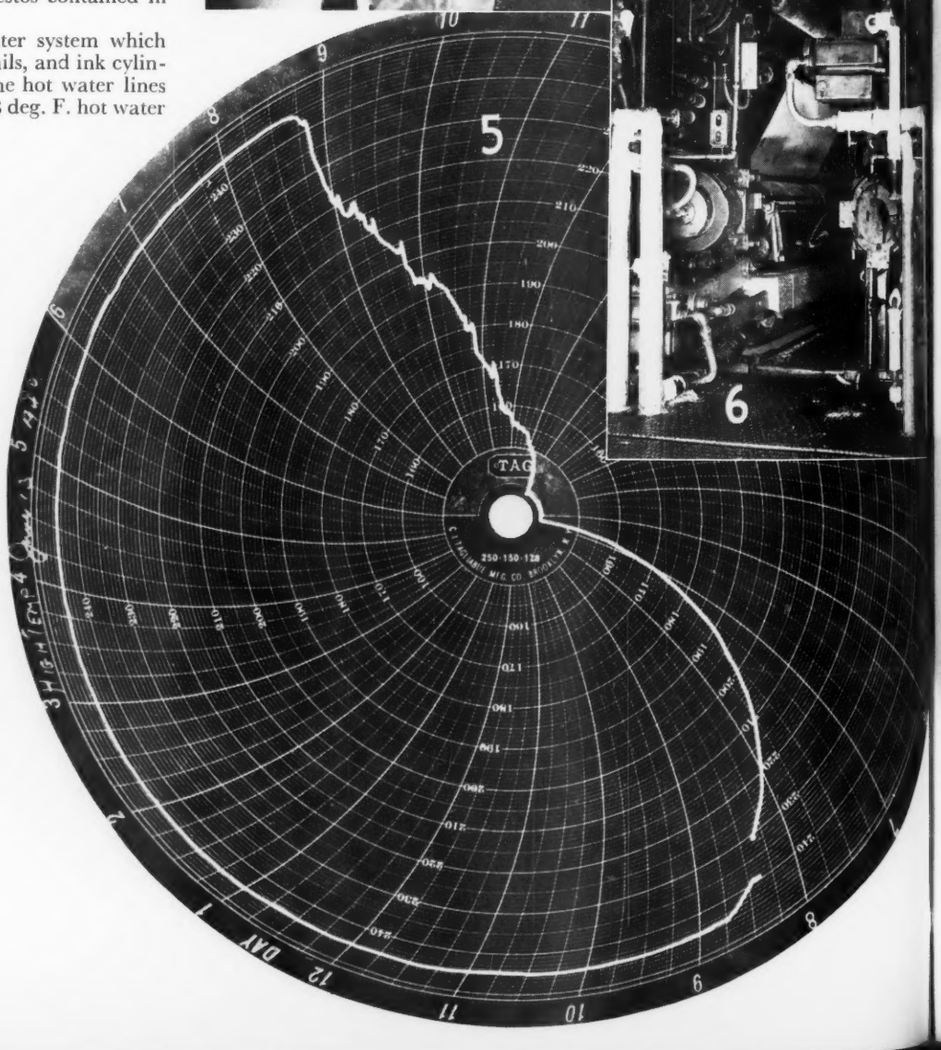




The 250 deg. F. system further supplies the plate cylinders (see left, center, Fig. 6) through axial connections. In any case no more than 4 deg. F. of water temperature is lost across the press. There is a supply and return header on either side of each press so that counter-flow on alternate cylinders can be attained. All hot water lines are, of course, heavily insulated with 2½ in. thick asbestos contained in sewed fabric.

As for the lower-temperature hot water system which maintains ink fluidity at all ink pumps, rails, and ink cylinders, Fig. 6 shows (at the right) one of the hot water lines coming up through the floor to supply 228 deg. F. hot water to the pump jacket (box which is just above center in Fig. 6), the ink rail (just behind the pump), and the main ink cylinder (just above the pump). The rail is specially designed as a hot water vessel lying along and almost in contact with the ink cylinder over a conderable arc, and fitted with 32 end-to-end ink slots fed with ink under 1 lb. pressure through wedge-shaped reservoirs. Here again, all hot water connections to various elements of the press are in parallel, and the direction of flow across the press alternates.

To date the installation has been entirely satisfactory and surprisingly economical. Although it is estimated that the three boilers will use about 10,000,000 cu. ft. of gas annually, careful cost accounting, and estimates based upon actual tests with a smaller system preceding and pioneering for the main installation, show that total fuel costs will not exceed $1.04 per press hour. This amount distributed over the 32,000 papers which are printed per press hour is quite small as compared to other production costs. Almost no maintenance will be required in view of the completeness of automatic control, the safety features provided, and cleanliness and space conservation of gas-burning systems.



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CHEMICAL RUBBERS *will have increased use in the printing industry*

By J. HOMER WINKLER*

**Assistant Manager, Ace Electrotype Co., Cleveland, O.*

THE recent announcement of the development of Ameripol, a new synthetic rubber-like material, by the B. F. Goodrich Tire and Rubber Co. has intensified interest in the various rubber substitutes. During the year of 1939 this country used 1700 tons of these synthetic materials as compared with 592,000 tons of natural rubber. It seems likely that an ample supply of natural rubber will always be available. It is also possible that the price of rubber may be increased and that a temporary shortage may be experienced if Great Britain and Holland loose control of their colonial rubber plantations. It is reassuring, however, to realize that the present, and proposed, productive capacity for the production of chemical rubbers in this country has placed a ceiling on price increases. The probability is that a 65c price will be the limit as compared with $1 per lb. as was paid several years ago. Crude rubber prices averaged about 20c per lb. for 1939. Synthetic rubber-like materials ranged from 60c to 95c per lb. These prices will be greatly decreased as their production increases. A price average of 30c to 40c per lb. would not be an unreasonable one to anticipate for these domestic products.

The word "synthetic", like the word "research", is rather loosely used in the printing industry. Synthesis is the opposite of analysis. It means the assembly, by various methods, of two or more elements to obtain a desired result. In chemistry, it generally refers to the reproduction by chemical means, of some product normally found in nature. The term "synthetic" is applied to rollers, press blankets, printing plate materials, etc. It has resulted in some confusion as to what is meant by a "synthetic" product.

The term "synthetic rubber" is not generally approved in the rubber industry, because actually there is no such product. The materials prepared by chemical methods have rubber-like properties and behavior but are not identical with natural rubber. It has been variously suggested that they be called chemical rubbers, artificial rubbers, elastomers, etc. An excellent compilation and classification of these products (prepared by Fisher[2]) is reproduced herewith. His recommendations for naming the different groups are used in this table.

In reviewing this table it is apparent that the field is a complex one and does not admit of much simplification. Certain chemical terms are necessary for exact and correct identification and classification of the compounds. Not all of these materials are being manufactured commercially. Some of them are not available in this country, and only a few of them at present seem to have applications in the printing industry.

During the first world war, Germany produced the first synthetic rubber-like material termed "methyl rubber". Two grades of this compound —"H" and "W" are listed in the table under the general heading of "Elastoprenes". Germany and Russia continued the development of butadiene compounds. Their work brought forth improved products in each country similar in composition and properties. The Russian product was called "Sovprene" and the German synthetic named "Buna".

A whole group of Buna rubbers were developed in Germany, starting with the numbered Bunas and then the lettered Bunas. Best known are Bunas 85 and 115, Buna N (Perbunan), Buna S, and Perbunan extra. The Bunas are not commercially available in this country at present. Rights to manufacture Bunas under their (German) patents in the United States is controlled by the Standard Oil Co. of New Jersey. They have announced that a plant capable of a daily production of 5 tons of Buna S will be constructed shortly in Baton Rouge, La. The Firestone Tire and Rubber Co. is licensed to manufacture Bunas and plans to be in production shortly.

Ameripol, as announced by B. F. Goodrich Company is similar to Buna S in composition. All of the raw materials used are readily available in this country. The principal ingredient, butadiene, is being manufactured in large quantities by several concerns in the United States. A plant capable of producing several tons daily of Ameripol is expected to be in operation by fall of 1940.

Ameripol and the entire group of Buna rubbers may have possibilities in the printing industry. They are so new, and thus far so scarce, that intensive experimentation concerning their applications for offset blankets, printing plates, etc., has not been done. This particular group of chemical rubbers seem to offer great possibilities.

The first American synthetic rubber-like material was placed on the market in 1931 under the trade name of Duprene. Developed by the E. I. DuPont de-Nemours Co. it has been continually improved since that time. All domestic raw materials — coal, limestone, and salt — are used in its preparation. In 1936 the generic name of Neoprene was adopted for this class of chloroprene rubbers and products made therefrom. The most recent types Neoprene G and Neoprene GW have many advantages for specific uses over the earlier types. More Neoprene is used in the printing industry than any other chemical rubber. The principal uses are in ink rollers and offset blankets. There is every reason to expect application for additional purposes in the printing industry.

Like rubber, Neoprene is mixed with reinforcing pigments, fillers, and organic compounds to impart the desired physical properties to the finished product. The same equipment used for rubber is used to shape and vulcanize Neoprene. By varying the kind and amount of compounding ingredients, different properties can be obtained in the finished product. Neoprene articles possess the same strength, resilience, abrasion resistance, and elasticity as rubber products. In addition, they resist deterioration from heat, oils, sunlight, aging, ozone, and most chemicals.

(*Continued on Page 45*)

[2]Fisher—Industrial and Engineering Chemistry—Vol. 31, p. 941-1939 "Nomenclature of Synthetic Rubbers."

CLASSIFICATION FOR SYNTHETIC RUBBERS AND RUBBERLIKE PLASTICS

Elastomers	Elastoprenes (derivatives of butadiene)	**Butadiene Rubbers:** Sodium butadiene rubber, Russia: Sovprene; Buna rubbers, Germany: Bunas 85, 115, S, N (Perbunan), Perbunan Extra; Piperylene rubbers
		Isoprene rubbers: Polyprene: natural rubber; Sodium isoprene rubber; Heat-polymerized isoprene rubber
		Dimethylbutadiene rubbers: Cold polymer: methyl rubber H; Heat polymer: methyl rubber W
		Haloprene rubbers: Polychloroprene rubber: neoprene; Polybromoprene rubber
	Elastolenes	Polymers, such as polyisobutylene, formed in the presence of a catalyst—e.g. boron trifluoride: Vistanex, Oppanol B
	Elastothiomers	Polyalkylene sulfides: Thiokol, Perduren
	Elastoplastics	Rubberlike polymers of acrylic and methylacrylic esters: Acranal, Plexigum; Rubberlike mixed glyplals; Plasticized polyvinyl chloride: Koroseal, Igelite, Mipolam; Polyvinyl acetate, above 40° C; Polystyrene, above 65°C and when partially solvated; Polyarylenethylanes or polyxylenes: AXF, from benzene, ethylene chloride, and aluminum chloride; Polyphosphonitrilic chloride $(PNCl_2)x$, an inorganic rubber
Plastomers		True Thermoplastics—Shellac, polystyrene, polyvinyl acetate, celluloid, cellulose acetate; Thermosetting plastics—Bakelite, glyplals, formaldehyde-urea polymers, acrylic resins

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DECALCOMANIAS—*Some technical information about production methods used in this highly specialized lithographic printing process*

By ADAM HENRI REISER

PART II

PART I of this work in the previous issue, defined the term decalcomania and gave a brief outline of this interesting lithographic process. Decal lithography was divided into three broad classifications, and the product of the first two, viz., Straight Decalcomania, and Slide Off Decalcomania, described. This concluding article will develop the third type, called Ceramic Decalcomania, and conclude with some observations on the production problem.

Ceramic Decalcomania

The third type of decalcomania is the work for ceramics. Designs destined to be transferred to china, pottery, and the like, are lithographed on special tissue paper in varnish colors, and then run through a dusting machine in which the dry mineral colors are dusted over the sheet so that they may adhere to the wet varnish. Some of the lighter colors, like yellow and tints, are run in wet form, no dusting being employed in that case. After the entire job has been lithographed, the design is transferred to the pottery surface in its correct position, and then made a part of it by baking under intense heat. Some coat the receiving surface with Canada Balsam and turpentine first to get better adherence. Baking causes the design to become amalgamated with the pottery, to actually become a part of the cup, saucer, or whatever it adorns. Due to the heat employed in the baking process, the finished colors on the object are often widely different from what they were when lithographed. An uncanny knowledge of the performance of a color under the heat of fusion with the china is thus essential. And yet, despite the years of experience with these materials, it is not uncommon to see many reprovings of a series, with subsequent firings to determine which way the colors will swing. Heat may turn a dirty red very bright indeed. Or it may be just the reverse. With the large number of variables included in the entire operation of ceramic lithography, anything can happen.

Remember, each layer of varnish is dusted with the color of the particular part of the design. Each dusting represents another color. Thus each color really represents two trips through a machine; once through the press and then through the duster. To lithograph an eight color pottery design, then, really represents sixteen press operations; eight for the varnish, and eight for the duster.

Very few colors in decalcomania overlay each other. Overdrawing or trapping, as it is commonly called, is unknown in the art of ceramic decalcomania. Colors must register to the proverbial hairline, just butting each other. Occasionally a green may be made deeper by following it with a light blue, or, a maroon deeper with another red. You see, the strong colors usually are run first. All of these, lithographed in varnish and subsequently dusted, are run first and then follows an overall varnish. Considerable difficulty is experienced with the powdered sheets before this blanket of varnish is spread over the sheet. The powder of the dry colors is abrasive in its action on the stone from which, incidentally, all ceramics are still lithographed.

This powder subjects the image to a heavy cutting action calling for corrective measures of a twofold nature by the pressman. He must fight the destruction of his image or work and its wearing off the stone through the action of the dusting powder. But he must also constantly offset the disturbance to the grease resisting part of the surface of his stone in those parts where there is no image. You see, work and non-work areas lie in the same plane and consequently suffer alike from the abrasive action of the dust. Thus while on the one hand he attempts to keep or restore the life of his grease receptive part of the stone, (the image), through ink adjustment, he is also fighting scum caused by the destruction of his grease resistant part of the stone (the non-work areas) by dampening solution adjustment.

After all dust colors are run and the allover varnish is applied to the sheet, the wet colors are run. These may be some of the yellows or colors which need no dusting.

It may be inferred from this upside down method of printing that the top side of the sheet (the side which has received the ink and varnish) makes actual contact with the surface of the china or pottery. That is exactly what happens. The designs are placed face down upon the dishes or pottery in their proper position. That places the last color on the sheet closest to the china, and puts everything right once more. "Peace! Isn't it wonderful!"

Specialized Press Skills

Lithography employed in the three classes of work described herein calls for certain types of highly specialized skills in all the branches employed in its production. Especially is this true in the presswork of decalcomania lithography. From the foregoing brief outline it is evident that the following partial listing of required ability and knowledge is needed:

(1) *Explicit knowledge of color and varnish action.*
(2) *Ability to lithographically print in varnishes, wherein the design is not so perceptible as in full strength color.*
(3) *Ability to retain that fine balance between water and grease so essential to overcome the abrasive action in ceramics.*
(4) *Ability to get a smooth lay of ink over highly glazed surfaces in decal lithography, so different from paper litho.*
(5) *Necessity of running color rotation backwards.*
(6) *Possession of versatility and aptitude to apply trade skills in another direction.*
(7) *Expert knowledge of dryer action and drying action of inks.*
(8) *Major portion of the work is still hand-drawn. Therefore, ability to retain every fine line at its original strength.*
(9) *Register is extremely important. This demands an ability to print accurately; to know the characteristics of the paper used in the process (gained by a deep study of that material); and, to know press performance.*

While all this is true of flat-bed decal, which is direct lithography, it becomes increasingly so of offset decal. A large part of the decal work is still lithographed direct from stone on the flat-bed press. But running the work in that fashion takes relatively long when compared with rotary printing. It appears at this time that placing small runs on the offset press is impractical, since there is too much time lost in waiting for the inks to dry. But on runs of 10,000 sheets and more, it is not only practical to run decal on the offset press, but profitable, for in the time such a run is complete and ready for the following color, the preceding color has had sufficient drying time in most cases. On the other hand, very little success has been encountered in running ceramics on the offset press. One house in the East is bending much effort to accomplish this, but with no outstanding success.

It is not surprising to find that efforts are being made to use the offset press and its speedy principle of rotary printing. This, however, is relatively difficult. In offset-lith on paper, ink dries because of one or more of a series of chemical and physical reactions. One ink drying action is the physical reaction of absorption. Ink is partially absorbed by the paper or job of the stock. Second, it dries through the medium of evaporation. Third, ink dries through the process of oxidation, the union with the oxygen in the air.

In decalcomania the first of these drying methods may be discarded immediately, for the ink absorption by paper or

(*Continued on Page 39*)

All eyes on HAMMOND

From coast to coast — printers, with an eye to economy and efficiency, look up to the Hammond Glider TrimOSaw as the finest saw-trimmer ever created!

1600 installations have proven that the Glider can do things faster, easier, safer and more accurately. Actual savings in composing-room and press-room costs have gained unanimous admiration and respect for the Glider TrimOSaw.

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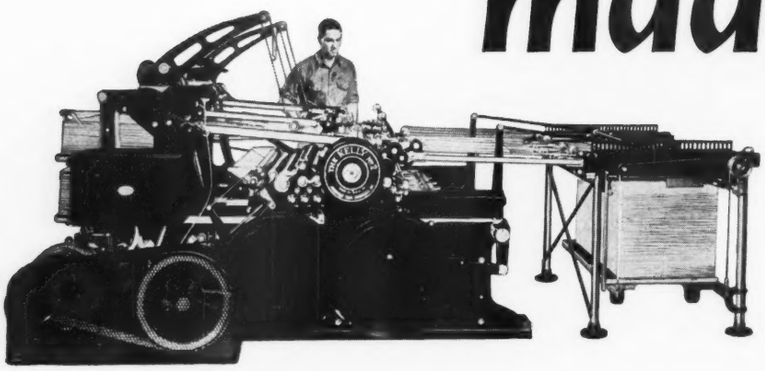
KALAMAZOO, MICHIGAN, U.S.A.

1604 DOUGLAS AVENUE

jobs stay made ready on the No. 2 KELLY



Largest sheet: 24x35 inches
Smallest sheet: 8½x11 inches
Motored by Kimble

Once a job is made ready on the No. 2 Kelly . . . with its extra weight and rigid impressional strength . . . it *stays* made ready to the end of the run! The time saved gives you more salable sheets and cuts lost time costs to a minimum. Jobs you would otherwise run on larger, slower-moving and more costly automatics can be run on the No. 2 Kelly . . . with full ink coverage and increased profits. The No. 2 will print 22x34 double folio, 22x28 the popular double cap sheet, 20x26 cover stock, or half sheets of 35x45 without taxing it to capacity. Or, you can print eight pages, 8½x11, of office forms or halftones. Many of the world's finest printers swear by their No. 2 Kelly's ideal size and ability to turn out high quality work . . . find them just as ideal for run-of-the-hook work. You, too, can modernize your plant for greater production and profit with a No. 2 Kelly. Ask your ATF Salesman for details, or send for new five-color press sheet.

Other famous ATF Presses: No. 1 Kelly, 17x22 Kelly, Kelly Clipper, Little Giant and ATF-Webendorfer Offset Presses.

American Type Founders

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Branches in 23 Principal Cities

Types used: Lydian Bold Italic, Spartan and Phenix

PRINTING PATENTS REPORT

Covering Patents Issued July 30, August 6, August 13 and August 20.

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading continuous from the last published issue of this magazine.

For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,210,106. LOOSE-LEAF BINDING ELEMENT formed from a shaped blank of flexible sheet material and having a backplate structure such that the device in use simulates the appearance of a conventional book. Invented by Rudolf Tauber, Brooklyn, N. Y. Unassigned. Application August 20, 1936. 3 claims.

2,210,886. TWO-HANDED ELECTRIC SAFETY CONTROL FOR PAPER CUTTING MACHINES so designed that the clutch, brake and lock pin are entirely independent of one another. The invention is characterized by use of a novel gravity actuated mechanism for applying the brake, the gravity mechanism normally being rendered ineffective by a supporting air cylinder, the air supply of which is controlled by a magnet, the circuit of the magnet being controlled by a pair of spaced manually operated switches. Invented by Haywood G. Dewey, Rochester, N. Y. Assigned to Eastman Kodak Co., 343 State St., Rochester, N. Y. Application March 4, 1938. 20 claims.

2,211,027. STAPLING MACHINE for applying longitudinal staples to a plurality of webs passing from a rotary printing machine. The machine is characterized by the fact that stapling (insertion of the staple and clinching thereof) is carried out while the staple is moved in such a manner as to be "substantially at rest" relative to the continuously moving web. Invented by C. G. Quick and R. W. Fowles, London, England. Assigned to R. Hoe & Co., Inc., East River & 138th St., New York, N. Y. Application February 22, 1938. 7 claims.

2,211,743. APPARATUS FOR PRODUCING BINDER ELEMENTS suitable for binding together pages of a book, cards, or other sheets. The invention provides novel method and apparatus for curling the "fingers" of a binder element made of thermoplastic material upon themselves to form a finished tubular binder element of predetermined diameter, particular attention being given to means for maintaining proper temperatures for stock of different thicknesses. Invented by Christian B. Nelson and Isidore Spinner. Assigned to Plastic Binding Corp., Chicago, Ill. Application July 17, 1936. 20 claims

2,211,744. METHOD OF FORMING BINDER ELEMENTS suitable for use in binding sheets of paper, books, etc. The invention includes the steps of laying a preformed, comb-like piece of thermoplastic material on a flexible sheet; rolling an arbor along the sheet and over the piece while keeping one end of the sheet stationary; winding the sheet around a portion of the surface of the arbor, and while the piece is so wound on the arbor maintaining it at an elevated temperature sufficient to soften the material sufficiently to impart a permanent set to the piece when cooled. Invented by Christian B. Nelson and Isidore Spinner. Assigned to Plastic Binding Corp., Chicago, Ill. Application July 17, 1936. 11 claims.

2,212,457. PAPER SLITTING MACHINE with improved features allowing the slitter elements intermediate the end slitters to be moved out of operating position during threading of the paper web to be slitted through the machine. Invented by Frank F. Schrier, Philadelphia, Pa. Assigned to The Moore & White Co., 2713 N. 15th St., Philadelphia, Pa. Application November 18, 1939. 11 claims.

Composing Room Equipment:

2,209,556. RELEASE KEYBOARD FOR MATRIX COMPOSING AND TYPE-LINE CASTING MACHINES, including key structures whereby it is possible to actuate a plurality of release devices successively and in a definite sequence by pressing but a single key, through releasing successively a number of different or identical matrices. Invented by Kurt Bendorff, Berlin, Germany. Assigned to the Firm Typograph G. m. b. H., Berlin, Germany. Application January 24, 1939. 10 claims.

2,209,557. CASTING MOLD HOLDER FOR MATRIX SETTING AND TYPE-LINE CASTING MACHINES making possible more simplified, quicker charging by only one manipulation, of an unlimited number of casting molds adjustable in type-line length and thickness. Invented by Kurt Bendorff, Berlin, Germany. Assigned to the Firm Typograph G. m. b. H., Berlin, Germany. Application January 27, 1939. 6 claims.

2,210,307. TYPE TYING-UP DEVICE so designed as to remain attached to the type body during its correction as well as during insertion in the printing machine. The device consists of two opposite sides made up of locking members, grooved furniture or spacers and offset wedges, the other two sides being formed of plain spaces or furniture and the sides being surrounded by a page cord anchored to the locking members. Invented by Wilibald Stolle, Freital in Saxony, Germany. Unassigned. Application October 21, 1938.

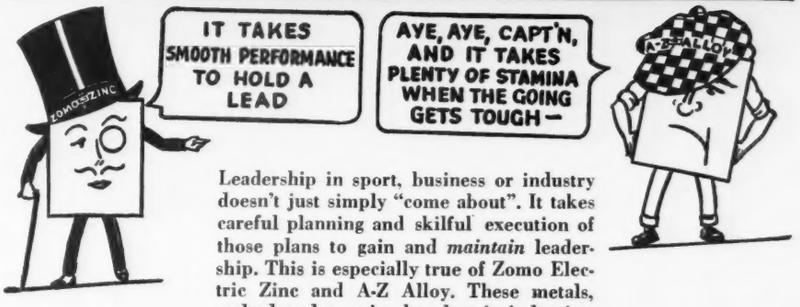
2,210,597. TYPOGRAPHICAL COMPOSING MACHINE including a novel star wheel assembly whereby the operator may make an adjustment in the tension of the clutch spring without leaving his position at the front of the machine. Invented by John C. Packard, Paterson, N. J. Assigned to Mergenthaler Linotype Co., 29 Ryerson St., Brooklyn, N. Y. Application August 15, 1939. 20 claims.

2,211,092. TYPE-CASTING MATRIX. The invention permits two-letter matrices to carry characters of a body size, larger than has heretofore been practicable, without dangerously decreasing the width of the dividing wall between the two characters, by reducing the vertical dimension of the upper ear on the casting edge of the matrix and utilizing the resulting increased space for the routing notches by increasing the distance between corresponding parts of the two character indentations. Invented by Hermann Brandenburg, Berlin-Tempelhof, Germany. Assigned to Mergenthaler Linotype Co., 29 Ryerson St., Brooklyn, N. Y. Application July 7, 1939. 6 claims.

2,211,169. TYPOGRAPHICAL COMPOSING MACHINE including one or more easily removable cover plates for the assembling apparatus, designed to allow minor adjustments of the assembling apparatus without removal of the cover plates. Invented by R. H. Scott, W. F. Gorse and A. S. Hayward, England. Assigned to Linotype and Machinery, Ltd., London, England. Application January 13, 1940. In Great Britain February 1, 1939. 15 claims.

2,212,225. TYPOGRAPHICAL DISTRIBUTING APPARATUS for slug casting machines such as "Linotype," etc. Provides pi matrix stacker device which receives and holds the sorts-matrices against stacking or displacement

(*Continued on Page 42*)


ZOMOSZINC
IT TAKES SMOOTH PERFORMANCE TO HOLD A LEAD
AYE, AYE, CAPT'N, AND IT TAKES PLENTY OF STAMINA WHEN THE GOING GETS TOUGH—
A-Z ALLOY

Leadership in sport, business or industry doesn't just simply "come about". It takes careful planning and skilful execution of those plans to gain and *maintain* leadership. This is especially true of Zomo Electric Zinc and A-Z Alloy. These metals, melted and cast in the electric induction furnace, are twin leaders, and are specified today by the majority of better engravers from the shores of Long Island Sound to the coast of sunny California.

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EQUIPMENT *and Supplies*

Ball Bearing Roller Cores

William C. Hart Co. Inc., has been advised by the Goss Printing Press Company of Chicago, that all the new units erected in the Manhattan and Brooklyn plants of the New York *Daily News* this summer will be equipped with Hart's Ball Bearing Roller Core.

With this announcement the Hart Company will place on the market a newly designed ball bearing core for cylinder and high-speed job presses.

Web Offset Printing Press

A web offset printing press said to be capable of producing 25,000 to 30,000 sheets per hour, is announced by the Webendorfer Division of American Type Founders. The first of these units is now under construction at the ATF-Webendorfer plant in Mt. Vernon, N. Y.

It is expected that this press, because of its great speed and flexibility will become a regular part of the ATF-Webendorfer web offset line, according to John B. Webendorfer, Vice President of the company. The standard unit will be constructed to carry a maximum width web of 15 in. and will be equipped with a sheeter to cut off a 17 in. sheet. It will be furnished with complete automatic lubrication. The unit will include motor equipment and controller.

The standard unit will lithograph one color only, but the press is so built that additional impression units, up to a total of four, may be added. Arrangements are also being made so that various additions, such as numbering, punching and perforating attachments may be built into the press at time of construction, or may be added at a later date. Optional equipment consists of delivery, folder, flat sheet delivery and rewinder singly or in combination.

The press now under construction is a two-color unit and is equipped with clamping arrangements on the plate cylinders to permit rapid changes of zinc lithographic plates. The press is designed for quantity production of letterheads, checks, coupons, forms, wrappers and the like.

Safety Routing Shields

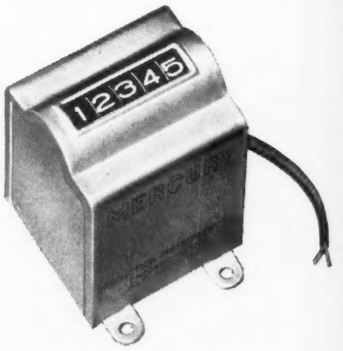
For use in photo-engraving and stereotype routing departments, the American Publishers Supply has announced a Safety Routing Shield. Chief feature of the shield is the transparent

window made of a flexible material which extends either in 4 in. or 6 in. length from the operator's forehead downwardly over the eyes and nose. The shield is affixed to the head with elastic band. Shields provided either with or without hinge to raise the window up over the forehead.

Small Electric Counter

A small electric (magnetic) counter is announced by the Production Instrument Company. The Mercury Counter has a very small energy requirement (about 2 W. at rated voltage) for long life to switch contact points and makes the instrument particularly suited for electric eye operation. Counters are tested at 600 counts per min.

The case and frame are of cadmium-finished steel with unbreakable plastic



View of Mercury small electric counter announced by Production Instrument Co. Energy requirement about 2 w. at rated voltage. Counts up to 99,999 and repeats.

windows. Five number wheels record up to 99,999 and repeat. Large white figures on black wheels are located close to the window for easy reading.

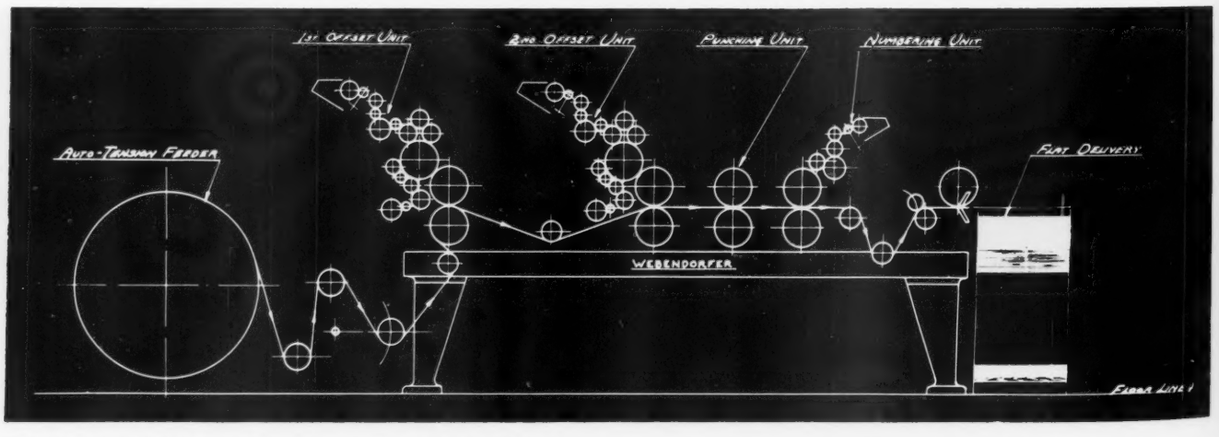
Mercury Counters are made for any 60 cy. a.c. voltage up to 230, and for any d.c. voltage up to 115.

South Bend 10 in. Bench Lathe

The 10 in. swing, 1 in. Collet Capacity Series "S" Tool Room Bench Lathe recently announced by the South Bend Lathe Works, is intended for precision operations on small work. The lathe is mounted on a welded steel bench. To simplify the use of the lathe and to prevent operator fatigue, the hand wheels have been made large in diameter, the graduations are clear-cut and easy to read, and the controls have been conveniently arranged.

The motor and driving mechanism are mounted under the headstock in the left end of the bench. The cone pulley belt passes up through the bed to the headstock. Back-gears provide slow

Side elevation diagrammatical representation of ATF-Webendorfer web offset printing press which is said to be capable of producing 25,000 to 30,000 sheets per hour. Prints from roll and sheets the paper at delivery end. This is a two-unit press (1 or 2 more may be added). Numbering, punching and other operations may be built into press or added later. Press designed for letterheads, checks, coupons, wrappers and the like.



The Publisher asked for "a Paper that Sparkles"

"Not a dull spot in it, editorially or mechanically," was his order, "and that applies to ads as well as news. Work with the advertisers, remembering that one stupid, crowded ad may kill interest in all the ads on the page. Get them to use more pictures. With Certified Mats, we can assure them sparkling reproduction."

For dependable stereotyping, rely on Certified Mats, made in the U. S. A.

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DRY MATS

Mr. Composing Room Executive:

The building of "pig pens" in which to place cuts to assure proper position on bases is a wasteful composing room operation.

Then, too, if cuts are merely laid on the base without using **Booth's Zink Cut Cement** to hold them in position they may be lost or may appear in a position different than that indicated in the advertiser's layout.

Avoid cut mounting troubles by using the cement that holds with the grip of a tiger's paw. Your fellow stereotype executive will appreciate having cuts mounted properly.

ZINK CUT CEMENT PRICES in the United States: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

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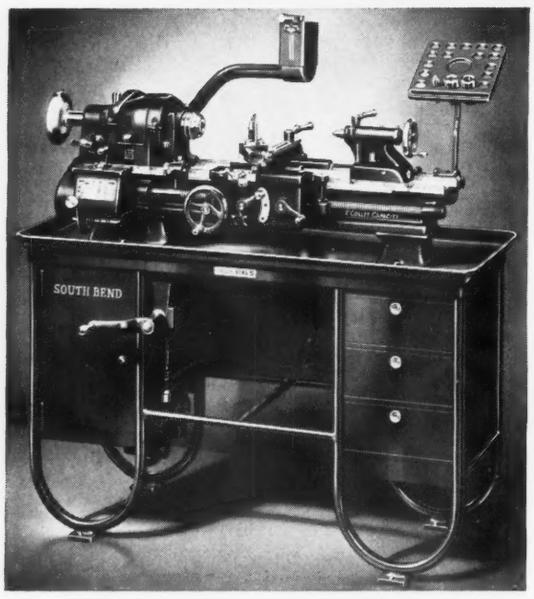

View of South Bend's 10 in. swing Bench Lathe.

spindle speeds and ample power for machining large diameters. A convenient belt tension release lever and wrenchless bull gear lock permit rapid changing of spindle speeds.

The headstock has 1⅜ in. capacity through the spindle and can be equipped with either hand lever type or hand wheel type draw-in collet chuck, taking collets up to 1 in. capacity. Twelve spindle speeds ranging from 50 to 1357 R.P.M. are provided by standard motor drive equipment. The compound rest top is rounded to prevent chips from collecting.

This lathe is made in 3 ft. to 4½ ft. bed lengths, providing center distances from of 16⅜ in. to 34⅜ in. respectively. The top of the bench has a rim all the way around and serves as a chip pan or oil pan. Tool room attachments supplied with the lathe include hand wheel type draw-in collet chuck, telescopic taper attachment, micrometer carriage stop and thread dial indicator.

The telescopic taper attachment, included as standard equipment on this lathe, makes it possible to change quickly from straight to taper turning or boring without disengaging the cross feed nut. The taper attachment is permanently mounted on the lathe carriage and is always ready for use in any position along the entire length of the lathe bed.

Time Delay Relay

The R. W. Cramer Company, Inc., states that Type TD enclosed Time Delay Relay is for use on a. c. to supply an adjustable or fixed time delay between

View of Cramer Time Delay Relay—Timer will automatically reset to starting position after each operation, or upon the opening or interruption of the power supply to the control circuit.

When you are called
"ON THE CARPET"

"Front offices" have a peculiar way of calling their mechanical executives "on the carpet" relative to production losses and perhaps excessive metal costs. All too frequently it's the old story of a front office executive buying type metal on a bid basis, then expecting the executive in charge of the stereotype department or composing room to get quality production at low cost.

At those "carpet sessions" the man who knows the least is generally the "goat." Imperial recommends that if you haven't already done so, you get a copy of our complimentary book—Everyday Problems of Type Metal Users and Their Solutions. Carpet sessions need hold no fear for you if you are armed with the facts in this book and insist that the front office buy dependable Imperial metal, serviced by the Plus Plan. Today's the day to switch to Imperial.

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MEASURED BY ANY STANDARD

MERCURY
ROLLERS AND BLANKETS
are **TOPS**

- Great Tensile Strength
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- Oil Resistant
- Safest Minimum Stretch

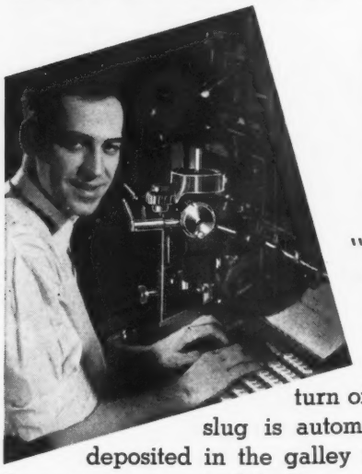
ABSOLUTE accuracy in construction is essential to first rate roller and blanket performance. For this reason, Mercury products are painstakingly checked and double checked by experts using finest precision instruments before they are released to the trade. This careful attention to the maintenance of high standards in every way is the secret of the superb performance of these products.

- Dependable
- Economical
- Concentric
- Vibrationless
- Quality Performance

RAPID ROLLER CO.
Federal at 26th
Chicago, Illinois

D. M. Rapport
President

Odd Measures TOUGH?



NOT ON YOUR LIFE!

"We turn 'em out one, two, three with our Mohr Saw." Exactly the measure you want with just a turn of the dial — and the slug is automatically sawed and deposited in the galley ready for make-up. Operating as a part of the linecasting machine, Mohr Saw provides the most modern, efficient and economical method of producing odd-measure composition.

100% AUTOMATIC SLUG-SAWING WITH MOHR SAW

Write today for free booklet, "Short Cuts with Odd Measures"

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50 years ago,

Francis McDonald Sinclair and Theodore S. Valentine founded our Company to render a service to the Graphic Arts such as they visualized in a rapidly growing industry. Through the years we have developed and expanded this service which is now available throughout this country and many other parts of the world. Our nearest Branch is fully equipped to supply your requirements.

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closing of one circuit and subsequent closing or opening of a second circuit. The Relay is said to be unaffected by ordinary vibrations.

Typical uses include: (1) Control of the various steps of acceleration in motor controls, (2) Action as a time limit relay in elevator controls and (3) Other automatic operations requiring precise timing.

The silver contacts of the switch are rated to carry a ½ h.p. motor load, a 1000 w. incandescent lamp load, a 1200 w. heater load. Quick-make, quick-break type, it is available with either normally open or normally closed contacts. The relay is motor-driven by a synchronous, slow-speed, 450 r.p.m. self-starting motor.

Flash Bold and Author

Drawing the public's attention for the first time to personal references of a member of its type design department, Lanston Monotype Machine Company announces that a new Monotype display letter has been drawn by Edwin W. Shaar, an assistant to Monotype's Art Director Sol Hess.

Flash Bold, 473

24 pt. size Monotype Flash Bold, 473

Edwin W. Shaar, Typographic Department of Lanston Monotype Machine Company, draws Flash Bold Series

The new display letter has been named Flash Bold, Series No. 473. Mr. Shaar has drawn a more emphatic version of the original design called Monotype Flash. Matrices have been cut for casting capitals, lower case, figures and points in sizes ranging from 24 to 72 points.

Flash Bold is the second type design drawn for Monotype by Mr. Shaar who has been associated with the company in excess of four years as an assistant to Mr. Hess. He is 25 years of age and a graduate of Pennsylvania Museum School of Industrial Art. He was married recently and expects to continue his association with the Monotype Company.

Conditions In Norway

According to one of its executives, the Cromwell Paper Company has been confronted with the same question-mark concerning European exports as other American manufacturers during the past four months.

The Cromwell Company recently received an interesting letter from its Norwegian distributor in Oslo which casts some light on the situation in that country. Following are excerpts:

". . . I beg to inform you that the situation here is very depressed so far as the economical life is concerned. It is very difficult to obtain payments from customers. However, my stock and my claims are intact, and I believe matters will improve very much as soon as we have been able to overcome the summer.

"Otherwise we are living quite normally, and we are all well. We do not momentarily feel the warfare very much except for the one thing that we are fearing—provisions of food will perhaps be rather short for the coming winter."

Supplies

For Linotype

Matrix Delivery Belts . . .
Space Bands . . Liners

For Plate Work

Router Bits . . . Chisels
Side Planes . . . Drills

For Space Backing

Superior Gummed Packing
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Increased Attendance Expected at Second Annual Conference

THE Board of Directors of the New England Newspaper Mechanical Conference is planning enthusiastically for a better meeting at its second annual conference to be held at Hotel Statler, Boston, on Saturday, Sunday and Monday, October 19, 20 and 21.

According to President F. M. Britton who is Production Manager of the Nashua (N.H.) *Telegraph*, the Directors of the Conference are encouraged by the success of the first meeting held in New London, Conn., last October. An attendance of between 300-350 is expected at this year's Boston meeting.

So far as arranged, the program will be as follows: Saturday, October 19, Registration. Sunday morning's meeting will be devoted to departmental clinics for press, stereotype, composing, photo - engraving executives with a combined clinic for Tubular stereotypers and pressmen. A dinner will be served Sunday noon to be followed by talks on interesting subjects and a business session. On Monday, digested reports of the previous day's clinical sessions will be heard.

Walter C. Crighton of the New London (Conn.) *Day* is secretary of the New England Newspaper Mechanical Conference.

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Research Committee Appointed

Chairman F. H. Keefe, of the A. N. P. A. Mechanical Committee announces the appointment of a Research group from among the committee members.

The Research Committee is composed of J. W. Park, Production Manager of the Chicago *Tribune;* J. A. Burke, Production Manager of the Gannett Newspapers; J. J. Shea, General Mechanical Superintendent of the Hearst Publications; L. Yeager, Production Manager of the Indianapolis *Star;* Leon Link, Production Manager of the Cleveland *Plain Dealer*, and Chairman A. H. Burns, Mechanical Superintendent of the New York *Herald Tribune.*

This sub-committee is sending out to members of the A.N.P.A. a request for suggestions on processes or materials used in the production of newspapers that in their opinion lend themselves to or require research.

It is hoped that this activity will result in the improvement of newspaper printing and the elimination of some of the troublesome problems now besetting the production men in newspapers.

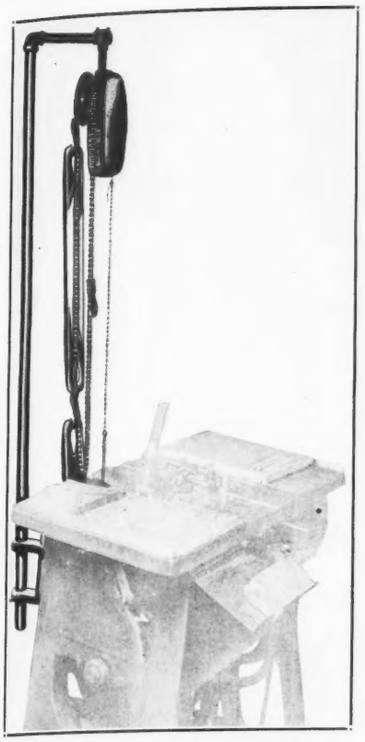
Reaction to Soiled Faded Colors

ACCORDING to the Color Research Laboratory of the Eagle Printing Ink Company, a single color is beautiful or ugly as the eye sees it as definite or indefinite. In printing ink, for example, a brilliant red printed from dirty rollers will quickly be spotted as something soiled and dingy. Yet if enough black ink is added to the same red ink to form a deep maroon tone real beauty will seem to be restored.

On the other hand, a weak impression of red ink will look faded and anemic. People will dislike it—even though they will find no fault with a pink tone formed by adding considerable white to the same red ink.

The answer seems to be in the fact that if you are exhibiting a pure color there should be no question about its extreme intensity and purity. It should never be a weak form of a pure color. You can, however, form tints by adding white, or shades by adding black. These mixed tones will also be beautiful if they are modified enough so that no one will mistake them as presuming to be pure.

According to Eagle, we like white paper and gray paper—but not newsprint which is neither white nor gray. The same emotional reaction seems to follow the visualization of colors. We like to see them as definite, full, brilliant—not as slightly soiled or as slightly faded.



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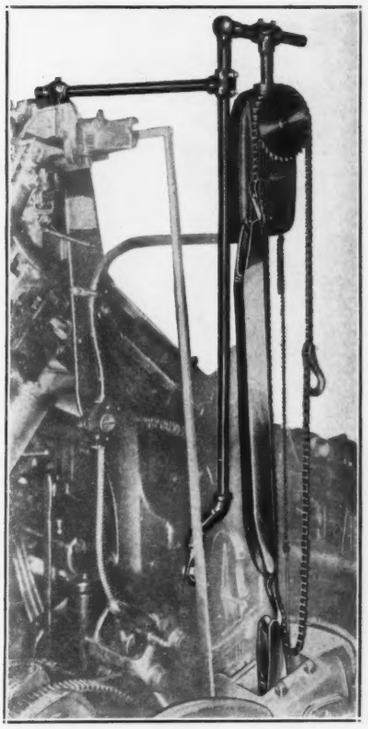

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DECALCOMANIAS

(*Continued from Page 28*)

other means is negligible. In lithographing over the white there is some amalgaming with the color that contacts it, but that also is negligible. Evaporation and oxidation are the two left. But the evaporation of litho inks is a minor matter, for there is very little volatile material included in those inks or varnishes. The main reliance in ink drying therefore is placed on the union with oxygen, the ability of the inks to oxidize. This is a slow process. As a consequence, eight to ten hours is not an unusual drying time for the inks on decal jobs.

Because of these reasons much emphasis is placed upon the importance of employing a minimum of dryers to accomplish a maximum of drying in decal inks. Overloading with dryers, just as in paper offset-lith, defeats the very purpose of the material. Judicious use of dryers also includes the choice between paste and liquid dryers. Paste dryers possess a white body. For this reason the successful decal litho pressman would never think of using a paste dryer with a black or dark blue. The white nature of that dryer would reduce the opacity or covering density of the resulting color.

Emphasis is also placed upon the proper mixture of inks. Incorporating a slow drying ink with a fast drying one will retard the drying action of the faster ink to such a degree as to seriously hinder delivery dates. It is the belief that the drying of blacks in decalcomania work can be aided materially by the addition of one-third bronze blue wherever that is possible.

In addition to this problem of lithographing with inks, there still remains the far greater problem of varnish printing in ceramics. A proper coverage of the varnish goes far toward assuring a perfect acceptance of the dry color dusted over it. Too strong a layer, however, will speedily fill in the work and cause a blurry design. Taking care of the proper coverage of varnish will also con-

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serve to a large degree the printing image.

Decalcomania has come far since its birth. Beautiful decorative and ornamental designs and advertising mediums are produced by this vehicle of education, culture and adornment. Appreciation of this art is increased by an understanding of some of the problems in its production. Familiarization with their production technique should also enhance the charm of the many types of beautiful decalcomania on glasses all about you, on dishes, vases, radios, furniture, cabinets, kitchen and bathroom walls, trucks, play toys, scales, physical culture apparatus, tools, and store windows. Their production is truly an art.

NO MAT SHRINKAGE

A BULLETIN issued by the Pennsylvania Newspaper Publishers' Association reports that General Manager William C. Plummer, of the Clearfield (Pa.) *Progress*, thinks he and his mechanical department operatives have solved one of the mat shrinkage problems. Mr. Plummer says the *Progress* has no shrinkage in mats. The situation was corrected in a simple manner, by placing the dry mats over the fumes of metal and letting them stay there for approximately ten minutes. A small metal pot is used. Two sticks are placed over the metal pot and the mats laid upon these sticks. The stereotyper removes them when he thinks they are thoroughly dry. Mr. Plummer believes the fumes from the metal dry the mats in such a way that the pores do not contract. He says he has been getting absolutely no shrinkage for almost a year. He is reporting on other than full page mats because the *Progress* uses a flatbed press.

Intertype Faces

Among the new faces cut by Intertype Corporation this month are 7 point Garamond with Italic and small caps, 9 point Baskerville with Bold, 10 pt. Alternate Gothic No. 1 duplexed with Vogue Bold Condensed and 24 point Cairo Medium. Samples are shown here.

THIS PARAGRAPH is set in the 7 point size of Intertype Garamond duplexed with *Italic and* SMALL CAPS 12345678 *12345678*
7 Point Garamond with Italic and Small Caps

THIS paragraph is set in the 9 point size of Intertype Baskerville duplexed with **Baskerville Bold** 123456 **123456**
9 Point Baskerville with Bold

ABCDEFG abcdefghijklmnopqrstuvwxyz 12345
ABCDEFG abcdefghijklmnopqrstuvwxyz 12345
10 Point Alternate Gothic No. 1 with Vogue Bold Condensed

ABC abcde 12
24 Point Cairo Medium

Company's New Officers

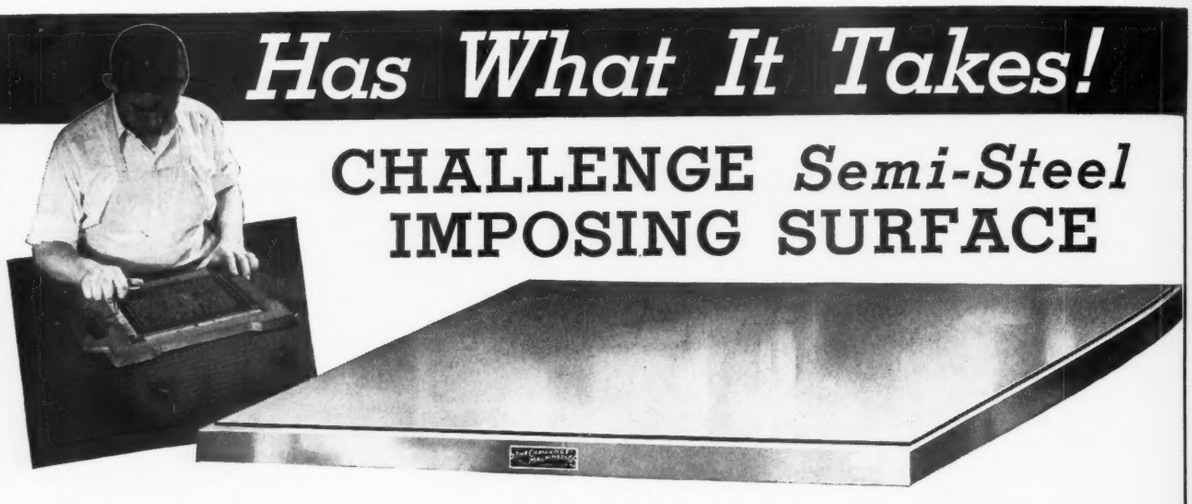
The Sniffin Printing Company, Inc., was organized on August 1, 1940 to take over the plant and business of The Philip L. Sniffin Company, at 6 Martine Avenue, White Plains, N. Y. since 1933. The officers of the new corporation, Richard Turner, president and Joseph A. Cangalosi, secretary-treasurer, are both graduates of the Carnegie Tech Printing Course. Mr. Turner was assistant production manager at Davis, Delaney & Harrs, Inc., printers and vice president of the Young Printing Executives Club, both in New York. Mr. Cangalosi learned the trade at the East Hampton (L.I.) *Star* and was head of the Research Department of Frank M. Knox Company, printing engineers in New York.

SPECIAL EDITIONS

Flint (Mich.) Journal

Flint, Mich., is proud of its auto industry. This is proved by the 68-page edition of the Flint *Journal* for Wednesday, July 31. The outstanding feature of this edition is the liberal quantity of halftones used. The *Journal* is proud that for the first time it presents to its readers the whole story of the production of an automobile entirely by pictures. Not so long ago, *Printing Equipment Engineer* published an illustrated story about the modernized *Journal* plant. The Motor Festival Edition indicates that Composing Room Superintendent Al Oberg and his fellow executives are using the *Journal*'s equipment to the best advantage.

Has What It Takes!



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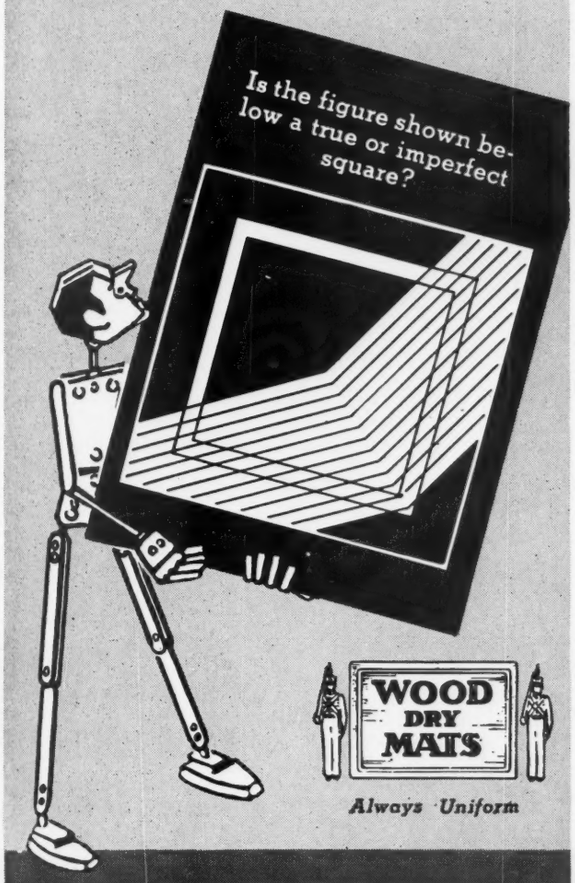

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TECHNICAL LITERATURE

New Era Publishes Catalog

A 24-page catalog in loose-leaf binder is being distributed by the New Era Manufacturing Company. The catalog illustrates and describes the New Era Multi-Process Printing Press as well as a Collating Machine, Tag Making Press, Tabulating Card Press, and Carbon Paper Folding Machine.

The New Era Press is used for making and printing tickets, labels, checks, tags, continuous zig-zag forms, snap-outs, office forms, book match covers, small cartons, and other products. Operations which can be handled on these machines include printing on one or both sides of the web, perforating and/or numbering, either across or along the web, and punching, slitting, die-cutting, scoring, reinforcing tags, putting on metal eyelets, and similar operations. Products can be delivered in sheets, re-wound, or zig-zag folded.

The catalog was prepared by Fred Glen Small, technical advertising specialist, typography by Frederic Nelson Phillips, and presswork by the McGraw Phillips Printing Company.

A copy is yours for the asking.

Linotype Machine Principles

Linotype machinists, operators and students will be interested to learn that a book, *Linotype Machine Principles*—is now on the press and that copies may soon be had from any Linotype agency at $3 the copy.

This new illustrated book has been planned as a reference manual on the principles of Linotype construction, operation and maintenance. It includes the essential technical data on the Linotype, arranged in the sequence of the basic mechanisms, parts and functions of the machine. (Thirty-six chapters, 474 pages, and a detailed index.)

PATENTS

(*Continued from Page 31*)

and permits ready release of a selected sorts-matrix. Invented by Julius F. Bettin, Bismarck, N. Dak. Unassigned. Application June 3, 1940. 6 claims.

Feeding, Folding, Delivery:

2,210,258. SHEET FEEDING TABLE FOR PLATEN PRINTING PRESSES including a structure for lowering the forward edge of the table relative to the rear edge, incidental to the action of retracting the table and after the foremost sheet has been transferred to the platen, in order to facilitate removal of the sheet from the table. Invented by Charles F. Root, Cleveland, Ohio. Assigned to The Chandler & Price Co., Cleveland, Ohio. Application August 24, 1938. 6 claims.

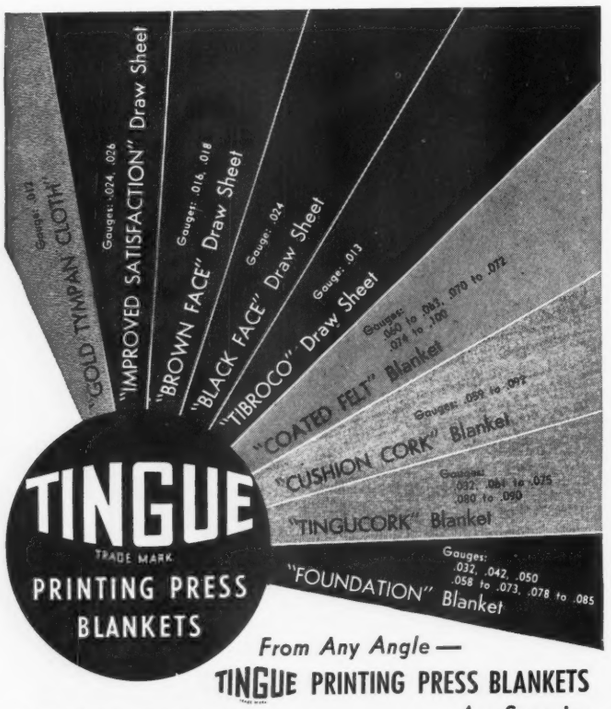
2,210,573. SHEET FEEDING MECHANISM FOR PRINTING PRESSES designed to increase the space between the tail of the fed-in sheet and the head of the next sheet by speeding up the free portion of the fed-in sheet. Invented by William K. Eckhard, Westerly, R. I. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application February 9, 1939. 16 claims.

2,211,046. CUTTING AND FOLDING MACHINE specially designed to eliminate the usual impaling pins required to carry the leading ends of the web or webs being operated on around the collecting or folding cylinders. According to the invention, a cutting device serves to almost sever successive signatures from the web, and the signatures are completely separated by tearing during folding, the arrangements being such that the web is carried to the desired part of the mechanism by the signature before the tearing operation. Invented by Howard M. Barber, Pawcatuck, Conn. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application April 1, 1938. 7 claims.

2,211,765. STRIPPING MECHANISM FOR PRINTING PRESSES, designed to strip sheets from the drum without the aid of gripping fingers, or similar mechanism usually mounted on and rotating with the printing roll. The invention is characterized by the use of a pivoted member for stripping the sheet from the roll, the end of the member in operation being positioned within a recess in the printing drum to prevent passage of the sheet between the stripper and the drum. Invented by William Ward Davidson, Evanston, Ill. Assigned to Davidson Mfg. Corp., 736 W. Jackson Blvd., Chicago, Ill. Application August 31, 1938. 19 claims.

2,211,766. STRIPPING MECHANISM FOR PRINTING PRESSES, designed particularly to prevent smearing of the ink on the printed sheet, comprising a plate bent to form a plurality of closely spaced sheet-contacting surfaces positioned along parallel lines and terminating in stripper points adapted to be close to the revolving pivoting drum, the surfaces and points of the device being sufficiently narrow to avoid the collection of ink. Invented by Robert C. Brown, Jr., Highland Park, Ill. Assigned to Davidson Mfg. Corp., 736 W. Jackson Blvd., Chicago, Ill. Application October 1, 1938. 10 claims.

2,211,791. ROTARY FOLDING MECHANISM, wherein the folding jaws and blade interact to form a fold about a plane which is more or less tangential, *i.e.*, the plane of the blade during the fold forming period is at right angles to the plane containing the axis of rotation of the blade and jaw cylinders and the jaws are arranged to form the fold about the leading edge of the blade and have a higher speed than does the blade. With this arrangement the jaws, because of their greater speed, strip the folded product from the blade. Invented by Cecil G. Quick and William A. Whitehead, London, England. Assigned to R. Hoe & Co., Inc., East River & 138th St., New York, N. Y. Application November 30, 1938. In Great Britain December 15, 1937. 9 claims.



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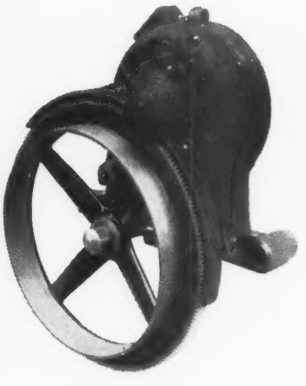

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Miscellaneous:

2,209,899. MANUFACTURE OF NEW FLUFFY CHROMIC OXIDE PIGMENTS useful in paints, printing inks, wallpaper printing, etc. Method includes preparation of a syrup by acid washing a hydrous chromic oxide to remove alkali compounds, and digesting the hot purified hydrous oxide with a slight excess of strong sulfuric acid. Invented by Marc Darrin, Pittsburgh, Pa. Assigned to Mutual Chemical Co. of America, West Side Ave. & McKay St., Jersey City, N. J. Application June 7, 1938. 10 claims.

2,209,907. MANUFACTURE OF FLUFFY CHROMIC OXIDE PIGMENTS OF BLUISH-GREEN COLOR, the process including the preparation of hydrous chromic oxide by adding a solution of an alkali chromate to a hot, aqueous alkaline sulfide reducing solution, and also adding acid to neutralize alkali formed by the reaction. Invented by Omar F. Tarr, Stoneleigh, Md. Assigned to Mutual Chemical Co. of America, West Side & McKay St., Jersey City, N. J. Application June 29, 1938. 14 claims.

2,210,032. METHOD AND APPARATUS FOR DRYING PRINTING INK characterized by the use of cup-shaped gas burners to subject the printed web to great heat, so vaporizing the solvent of the ink and causing the vaporized solvent to be drawn into the burners and burned. Frederic O. Hess, Germantown, Pa. Assigned to Interchemical Corp., 75 Varick St., New York, N. Y. Application December 29, 1937. 27 claims.

2,210,461. SYNTHETIC RESIN ROTOGRAVURE OR INTAGLIO PRINTING INK containing as a novel constituent a resinous polymer of dihydronaphthalene. Claimed to be a quick drying, high gloss ink free from tackiness, the ink has a high tolerance for pigments and coloring matters. Invented by Thomas A. Martone and Charles S. Rowe, Wilmington, Del. Assigned to E. I. du Pont de Nemours & Co., Nemours Bldg., Wilmington, Del. Application October 5, 1937. 8 claims.

2,210,591. PRESS for baling paper scraps, etc., into a dense mass, comprising a compressor platen and operating mechanism therefore driven by an AC motor characterized by decrease in speed and increase in torque in proportion to load. Invented by George W. Langford and Alford C. Barrows, Ann Arbor, Mich. Assigned to Economy Baler Co., 330 Langford St., Ann Arbor, Michigan. Application May 5, 1937. 4 claims.

2,210,763. TREATMENT OF IMPINGEMENT CARBON BLACK to facilitate their dispersion in rubber, etc. (product useful in printer's inks, paints, enamels, lacquers, etc.) by application of an acid such as hydrochloric or a like mineral acid, or maleic or a like organic acid. Invented by Robert J. King and William Mitchell, Jr. Assigned to Kind & Lang, Inc., Stamford, Conn. Application October 21, 1937. 4 claims.

2,210,879. METHOD FOR PRINTING "REVEALABLE IMAGES" on paper, etc., whereby a portion of the basic image is concealed by an overprinting or superimposition of a masking coat, that portion of the masking coat overlying the basic image being removable merely by rubbing the designated area. The printed product consists of a base sheet, a basic image on its surface, a transparent protective varnish coating over the surface of the basic sheet, a masking coat for the image superimposed on the transparent protective coating, and a surface image superimposed upon the masking coat. Invented by Joseph H. Cahoon, Louis P. Hall and Van R. Peterson. Unassigned. Application May 19, 1937. 2 claims.

2,212,260. COLOR DISPERSION APPARATUS designed for direct mixing of water-wetted colors with nonwater miscible dispersing mediums. Useful in the manufacture of paint, printing inks, lacquers, etc., the device consists generally of a kettle, rotating impeller, and arcuate members for chopping up the paste agglomerate. Invented by Abraham Brothman, New York, N. Y. Unassigned. Application February 12, 1938. 8 claims.

Plate Making:

2,209,499. PROTOGRAPHICALLY PRODUCED STENCIL SCREEN, particularly for reproducing wood grain or marbling, comprising open-meshed woven round wire flattened at the intersections and having spots of light hardened material closing certain of the meshes to form the desired design. Invented by Charles A. Wulf, Indianapolis, Ind. Unassigned. Application October 17, 1936. 4 claims.

2,210,578. METHOD AND APPARATUS FOR DEHYDRATING STEREOTYPE MATRICES by means of suction while the matrices are being subjected to heat and pressure. The invention provides a duplex arrangement of matrix dehydrating devices with respect to a centrally disposed molding press whereby two matrix dehydrating treatments may be effected simultaneously, or whereby one matrix may be subjected to dehydration while another is being molded in the press. Invented by Charles Fritschi, Riverside, Conn. Unassigned. Application May 5, 1937. 11 claims.

2,210,726. LAY-OUT AND PHOTOCOMPOSING APPARATUS for preparing press-plates for photo-lithographic printing presses. The invention includes the usual clear glass carrier for the registered negatives, and an improved device for handling the negative, while being registered on and secured to the carrier. Invented by Dante V. Mazzocco, New York, N. Y. Unassigned Application June 2, 1939. 9 claims.

2,210,923. PROCESS FOR GRAINING INTAGLIO AND GRAVURE PRINTING PLATES by an ink roll-up method, comprising cleaning the plate with a solution of acetic acid and salt and etching and then inking the plate with the acid resist top still present to the bottom of all incisions, then etching until the acid breaks down the ink and the bottoms of the incisions are formed with a stippled pattern which takes place of engraver's cross hatching now used. Invented by Henry R. Jacquerod and James H. Gibson, Teaneck, N. J. Assigned to Jacquerod by Gibson. Application July 10, 1939. 9 claims.

2,211,323. LIGHT SENSITIVE PHOTOGRAPHIC EMULSION for application as a flexible coating to photographic film, plates or other supports, comprising a silver halide dispersed in one of certain polyvinyl acetaldehyde acetal resins soluble in cold water. Invented by Charles R. Fordyce, Rochester, N. Y. Unassigned. Application July 27, 1938. 6 claims.

2,211,345. MANUFACTURE OF HALFTONE SCREENS in photomechanical printing. According to the method of the invention, a sensitive plate or film is exposed through a geometrical screen of the ruled type, the plate or film being moved in its own plane, parallel to and behind the screen. Or the light source is moved parallel to and in front of the screen in an opposite direction to that of the plate or film, the speed being such that the shadow of the screen always falls on the same area of the film. Invented by Alexander Murray, Rochester, N. Y. Assigned to Eastman Kodak Co., 343 State St., Rochester, N. Y. Application June 1, 1939. 9 claims.

2,211,346. OVERCOATING OR BACKING LAYERS FOR PHOTOGRAPHIC FILM OR PLATE, removable in photographic baths, the compositions from which the layers are formed being characterized by the presence of water-soluble salts of esters of sulfo aliphatic dicarboxylic acids. Invented by Gale F. Nadeau and Alfred D. Slack, Rochester, N. Y. Assigned to Eastman Kodak Co., 343 State St., Rochester, N. Y. Application May 12, 1939. 11 claims.

2,211,347. OVERCOATING OR BACKING LAYERS FOR PHOTOGRAPHIC FILM OR PLATE, removable in photographic baths, the compositions from which the layers are formed being characterized by the presence of alkyl aryl sulfonate of an isopropyl naphthalene. Invented by Gale F. Nadeau and Alfred D. Slack, Rochester, N. Y. Assigned to Eastman Kodak Co., 343 State St., Rochester, N. Y. Application May 12, 1939. 10 claims.

2,211,601. FLONG OR MATRIX BLANK comprising a thin backing sheet composed of 80-90% paper pulp, 10-20% powdered aluminum or copper, and a thin facing

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sheet of a corresponding metal cemented on the backing sheet for receiving the impression. Invented by Claude E. Hensley, Oklahoma City, Okla. Unassigned. Application July 5, 1938. 3 claims.

2,212,233. DEVICE FOR COATING LARGE PRINTING CYLINDERS with sensitized resist solution in preparation for etching. According to the invention, the coating solution is applied along the length of the cylinder by a shallow, elongated tray, the cylinder being rotated during coating about its normal axis as well as about a vertical axis. Invented by Charles L. Henderson, Appleton, Wis. Assigned to Paper Patents Co., Neenah, Wis. Application May 17, 1937. 17 claims.

2,212,234. DEVICE FOR COATING LARGE PRINTING CYLINDERS. (Supplement to Patent No. 2,212,233, above.) Invented by Charles L. Henderson, Appleton, Wis. Assigned to Paper Patents Co., Neenah, Wis. Application May 17, 1937. 1 claim.

Printing Presses and Supplies:

2,209,482. BED AND CYLINDER PRESS with novel eccentric mounting device for the cylinder supporting brackets, as well as mechanism for rotating and securing the mounting devices, the structure being such as to attain fine adjustment of contact between the impression cylinders and the form bed. Invented by Anton Stobb, Elizabeth, N. J. Assigned to American Type Founders, Inc., Elizabeth, N. J. Application February 10, 1939. 13 claims.

2,209,520. MARKING MACHINE for marking successive outlines of a design on a sheet of cloth, paper, etc. (particularly for use in the production of bedspreads). The device comprises generally a pattern roll and an adjacent, constantly driven marking roll between which the fabric, etc., is drawn, and novel means for holding the roll and fabric in contact with the pattern. Invented by Lyman Hamrick, Gaffney, S. C. Unassigned. Application June 12, 1939. 7 claims.

2,210,243. UNDERSHOT INK FOUNTAIN FORPRINTING MACHINES including a novel thumb screw operated device for adjusting the inclined bottom blade or scraper blade of the fountain relative to the peripheral surface of the fountain roller, thereby controlling the amount of ink supplied from the fountain. Invented by William F. Huck, Richmond Hill, N. Y. Assigned to R. Hoe & Co., Inc., East River & 138th St., New York, N. Y. Application December 30, 1937. 6 claims.

2,210,474. MACHINE FOR COLOR PRINTING CLOTH OR PAPER WEBS by means of a stencil through which the ink is supplied to the underlying web on a supporting bed, consisting in feeding the web intermittently over the bed after one printing operation a distance equal to the width of the print measured in the direction of the length of the web, and printing the web after each intermittent feed, in such a manner that the web has applied to it a plurality of repeats adjacent to one another. Invented by George H. Tillett, Chesham Bois, England. Assigned one-half to Charles Ashton Lister, Redhill, Surrey, England. Application January 31, 1939. In Great Britain February 5, 1938. 6 claims.

2,210,500. PRINTING CYLINDER AND METHOD OF ATTACHING ARCUATE PRINTING PLATES THERETO. The invention accommodates plates of both cylindrical and semi-cylindrical form, and comprises means providing a bearer for the back of the printing plate, a device fixed to the bearer to engage one side of the plate, a device to engage the other edge of the plate movable with reference to the first plate edge engaging device and carrying an adjustable support to limit axial movement at a point opposite a portion of the plate, and a nut arranged to bring about this movement. Invented by Curt J. Rohland, Seekonk, Mass. Assigned to Paul-Rohland, Inc., Rhode Island. Application April 2, 1937. 6 claims.

2,210,749. PRINTING PLATE MOUNTING RACK adapted to be secured in grooves in a printing press plate cylinder, and method and apparatus for inserting and repairing the rack. According to the invention, the rack is introduced into the groove of the plate cylinder through the open top of the groove, and then secured by upsetting portions of the rack against the side wall of the groove. Invented by William F. Brugmann, Evanston, Ill. Unassigned. Application April 25, 1936. 7 claims.

2,211,002. UNIT TYPE DRIVING MECHANISM FOR PRINTING PRESSES, characterized by provision of an auxiliary motor for "inching," or slow speeds, this auxiliary motor being adapted to drive not only the folder but also the press units on either side thereof. Invented by Allan J. Cline, Chicago, Ill. Unassigned. Application April 8, 1938. 8 claims.

2,211,175. REGISTERING AND HOLDING DEVICE for printing presses, stenciling machines, or like equipment for printing in two or more colors on cylindrical articles such as cans, bottles, tumblers, etc. The invention includes a chuck for supporting the article to be printed a braking device for preventing rotation of the chuck, and novel photoelectrically controlled electromagnetic means for bringing the braking device into effect. Invented by Frederick Shurley, Windsor, Ontario, Canada. Assigned to Guthrie Ceramic Labelling & Machinery Co., Inc., Dover, Del. Application July 13, 1938. 19 claims.

2,211,506. PRINTING APPARATUS AND METHOD particularly for use in printing short runs on book covers. The invention provides extreme flexibility of crom-dimension of imprinted design, using a conventional die of fixed dimensions, by adjusting the amount which the die overhangs the work to be printed. Invented by John M. Kirste and Charles J. Kirste. Assigned by Charles J. Kirste to John M. Kirste. Application April 15, 1939. 10 claims.

2,211,673. ELECTRICAL DRIVING ARRANGEMENT FOR PRINTING MACHINES, wherein the drive at both normal and "crawling" speeds is effected by a single a.c. commutator motor which is connected to a normal frequency supply, functioning in a commutator motor, for normal speed, but for "crawling" speeds is connected to a low frequency supply and arranged to function as an induction motor. Invented by Alexander T. Robertson, Newcastle-on-Tyne, England. Assigned to J. H. Holmes & Co., Ltd., Hebburn-on-Tyne, England. Application August 12, 1938. In Great Britain August 17, 1937. 13 claims.

2,211,910. PRINTING MECHANISM of the kind having individual type or line slugs mounted on a flexible holder or galley which can be readily bent to an arc conforming with the periphery of a cylindrical supporting segment to be mounted in the press, but which can be laid flat when removed from the supporting element of the prem. The invention is specifically concerned with means for consolidating and compressing the individual line members circumferentially of the flexible holder or galley when the holder or galley is bent to arcuate form. Invented by Worth G. Read, St. Paul, Minn. Unassigned. Application April 6, 1939. 7 claims.

2,212,137. ROTARY PRINTING PRESS INKING MECHANISM of the type wherein the fountain roller, fountain roller knife blade, etc., are mounted permanently in the press frame, while the fountain itself is readily insertable or removable without disturbing the roller or knife. The invention is particularly concerned with the fountain structure. Invented by Emory W. Worthington, Chicago, Ill. Assigned to The Goss Printing Press Co., 1535 S. Paulina St., Chicago, Ill. Application March 29, 1939. 7 claims.

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To Address Craftsmen

Howard N. King, typographic consultant to Intertype Corporation, will address Craftsmen's Clubs in Minneapolis, St. Paul, Duluth and Winnipeg on October 15, 16, 17 and 18. Mr. King recently completed a tour of Missouri, Iowa, Kansas and Nebraska.

CHEMICAL RUBBERS

(*Continued from Page 26*)

Thiokol[3] was discovered by Dr. J. C. Patrick of the Thiokol Corporation, Trenton, N. J. While experimenting on new methods of preparing automobile anti-freeze solution, he mixed ethylene dichloride and sodium polysulfide and obtained a rubbery gummy looking mass. This trade name is now applied to an entire class of compounds based on the polysulfide reaction products. Each is basically different from another and are similar only in the method of preparation. One type of "Thiokol" has extremely low moisture absorption, in addition to excellent solvent resistance. Another stands extreme low temperatures and still remains flexible. Still another Thiokol comes in powder form and may be molded. Articles such as gasoline and paint spray hose, printers offset blankets, and plates must withstand oil and solvents. Thiokol offers an improved material for these applications. For resistance to aging, such as in the covering of electric cables (overhead and underground) Thiokol is finding excellent acceptance. Through the use of new plasticizers in recent experimentation, a Thiokol for printing rollers that looks promising has been developed.

Triakol, manufactured by the Dow Chemical Co. is a compound similar to Thiokol. It is also a product of the polysulfide reaction.

Elastoplastics are thermoplastic materials with rubber-like properties. Normally they are flexible and elastic and have many properties in common with rubber. Upon the application of heat and pressure they may be formed or molded repeatedly. Typical of this group of compounds is Koroseal,[4] manufactured by the B. F. Goodrich Co. The trade name does not refer to a single substance but to a group of materials prepared by the same chemical reaction. Rubber-like gel structures are obtained by the treatment of highly polymerized vinyl halides with plasticizers (such as tricresyl phosphate) at an elevated temperature followed by cooling. Koroseal may be molded, extruded, calendered and tubed. It is resistant to aging and light-checking. Like rubber, it forms highly viscous solutions with solvents. In this form it may be used for impregnating and coating fabrics, metal parts (such as plating racks) and paper. It is resistant to moisture, mineral and vegetable oils and is stable over a wide range of temperature. Koroseal, thus far, has not been used in the printing industry. It has possibilities for special applications.

Several other commercial chemical rubbers are now being manufactured. They have not found extensive applications in the printing industry to date. Vistanex is sold in two grades, No. 6 and Medium, by the Advance Solvents and Chemical Corporation. The first is a very soft, sticky and clear solid which flows slowly when cold. The second is similar to a pure white crepe rubber in appearance.

The Naugatuck Chemical Co. manufacture a plastic, of the same general group of elastoplastics as Koroseal, which is sold under the trade name of AXF. It is a somewhat elastic resinous material, dark brown in color. It hardens slightly when heated, without melting. Insoluble in mineral and drying oils, it is not attacked by acetone, alcohol, or gasoline. The principal applications for AXF are in combination with rubber, Thiokol, and Neoprene. A Neoprene-AXF combination is used for making tint materials for use in cutting letterpress printing plates.

Natural rubber can be processed and modified by chemical means so as to result in materials with different properties and appearance from the numerous forms of rubber commonly observed.

[3]Martin, Jr. and Patrick—Industrial and Engineering Chemistry Vol. 28 p. 1145, 1935 "Constitution of Polysulfide Rubbers."

[4]Brous and Semon—Industrial and Engineering Chemistry—Vol. 27, p. 667, 1936 "Koroseal, A New Plastic."

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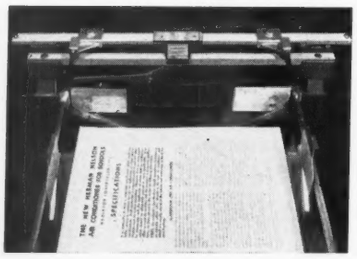

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Pliofilm as manufactured by the Goodyear Tire and Rubber Co. is a representative example of this class of materials. This company also prepares Plioform and Pliolite. Chlorinated rubbers are sold by the Hercules Powder Co. (Tornesit) and the Marbo Products Co. (Marbon and Marbo). A cork-rubber material is marketed under the name of Corprene by the Armstrong Cork Products Co.

The field of elastomers is a most active one and is being energetically canvassed. The consumption of synthetic rubber-like materials for 1940 in this country will probably reach 3500 tons, double that of 1939. A continued increase of their consumption is expected. The printing industry may expect the introduction of some of these new materials for various purposes where rubber is now used. Reasonably it may be assumed that an expansion and improvement of present applications will take place. Although some of the chemical rubbers as now constituted may not at present be suitable for applications in the printing industry, it must be admitted that some modification of them may work. A majority of these compounds can be altered during their preparation or by the addition of other substances, thus resulting in a different set of properties. Most of them can be combined with other similar substances or even with rubber itself. A vast number of combinations remains to be tried before a final decision as to their fitness can be made.

PRINTING INKS

(Continued from Page 2)

color unit (a plate cylinder printing on the same impression cylinder as the key plate). The positive plate impression is superimposed directly over the negative impression. When the impression of the positive plate occurs, the color changes take place.

It is understood that all regular ink fountains in the press will carry the first down ink, which is designed to print solid black or deep blue (toned ink) just as the present news inks are now utilized for text, line and solid matter.

In further explanation of using the new color process, in newspaper printing, Mr. Lengel stated that inks are being perfected so that it will not be necessary to alter the pH values of newsprint. The pH value of newsprint runs about 5.5. This value is the preservative of the stock and may be maintained accurately without extra cost and without particular production problems. It could also be set at some other figure just as easily, and maintained at that figure if the user so desired. Mr. Lengel states it is preferable, however, to simply place the ink in the press fountains in the usual way, print the halftone key plate in the usual manner and secure the color effect through superimposing the second (positive) halftone plate over the first down plate printed in the regular manner.

Offset-lith Demonstrations

A series of demonstrations of a complete offset plant is now being held under the auspices of American Type Founders. Equipment on display includes one of the ATF-Webendorfer sheet-fed offset presses, precision darkroom camera and offset plate-making equipment. Answers to inquiries and pertinent information regarding the process will be supplied to visitors.

The dates and locations of the demonstrations so far scheduled are:
September 12, 13, 14—ATF Boston, New York, Buffalo, Cleveland, San Francisco and Dallas Branches and at E. G. Ryan & Co., Chicago.
September 26, 27, 28—ATF Pittsburgh, Cincinnati, Minneapolis and Los Angeles Branches.
October 10, 11, 12—ATF Philadelphia, Baltimore and Seattle Branches.
October 24, 25, 26—ATF Atlanta and Denver Branches.

At these demonstrations, according to ATF Vice President Frederick B. Heitkamp, an opportunity is offered to study offset procedure from the taking of the original screen negative, through the process of plate making, to actual make-ready on the press.

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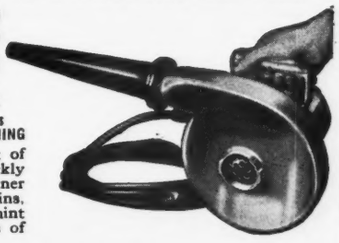

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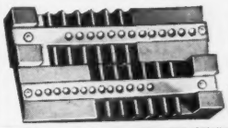

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POST-STANDARD

(*Continued from Page 20*)

The control panels are the brains of the press. They control all operations of the press—starting, stopping, speed regulation and protection. The printing cylinders can be moved a fraction of an inch for placing the printing plates on the cylinder, or the press can be accelerated or decelerated to any desired operating speed from starting to the maximum of 42,000 inpressions (48 page newspapers) per hour. Tandem interlocks between the two control panels allow operation of either press drive singly or the two drives in tandem. In addition, a transfer panel, furnished with the controls provides an electrical means for obtaining the various printing combinations which are possible from the press.

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Mailing Room

Thomas W. Cahill supervises the mailing room operations. To the south of the pressroom and in the southeast corner of the building is the mailing room, with its 14 new Jampol steel tables and its three Gerrard wire-tying machines, where papers are bundled for delivery to trucks after delivery by three conveyors from the pressroom. The covered truck platform is in the court off the pressroom, so papers are protected from the weather when placed on the trucks. There is provision for loading nine trucks at once from three doors.

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Use this Free Service — Keep up-to-date on Equipment and Supplies

Composing Room

1 CUT CEMENT—"Booth's Zink Cut Cement holds with the grip of a Tiger's paw — saves time in the composing room." Let the E. A. Booth Rubber Company send you full information. Circle this number on the coupon.

2 DETAILS AND SPECIMENS of Ludlow typefaces will gladly be sent you by The Ludlow Typograph Company. Learn more about Ludlow equipment.

3 DETAILS on New Universal Intertype are offered by the Intertype Corporation. Check up on this new typesetting machine. No obligation, just fill out the card

4 SAW TRIMMER—"C&G Saw Trimmers increase production and reduce costs materially." Milwaukee Saw Trimmer Corporation this month offers to mail you illustrated literature. Use the postage-paid return card.

5 MOTOR AND ROUTER — Cushman Electric Co. will send illustrated booklet showing features of its Offset Motors for Linotype and Intertype drives. Circle this number on the coupon.

6 DISTRIBUTOR SCREWS — Linotype Parts Company offers data on its screws. "Converts your machine to fast distribution."

7 METAL FEEDER — "The Jordan continuous feeder has many exclusive features." United American Metals Corp., will be glad to send you interesting data. Learn more about this feeder.

8 SAW — "Actual savings in composing-room and press-room costs have gained respect for the Glider TrimOSaw". Hammond Machinery Builders offer description and prices in interesting booklet. Send for it.

9 SPECIMENS of the new Monotype "Stylescript" are offered by Lanston Monotype Machine Co. Post-card brings booklet on this typeface.

10 SAW — Free booklet entitled, "Short Cuts With Odd Measures" will be sent to you by the Mohr Lino Saw Company. Just fill out the coupon and mail. We do the rest.

11 TYPE METAL—Imperial Type Metal Company this month offers interesting facts on its "Plus Plan". Send for booklet.

12 PROOF PRESS—Vandercook & Sons will be glad to send you details on new and rebuilt proof presses. No obligation, just fill out the coupon and mail.

13 COMPOSING ROOM SAW — New Hammond Mercury "has what it takes." Hammond also features popular priced Bench Mercury. Coupon brings you free complete literature. Learn more about these saws.

14 QUOIN—Challenge Machinery Company offers to mail you full details on its Hi-Speed Quoins. Use the Post Card. No obligation.

15 MATRIX CONTRAST Corporation offers booklet giving facts showing how "use of Matrix Contrast Service eliminates one third of all machine errors." Send for it.

16 BAND SAW — H. B. Rouse Company will be glad to mail you booklet which describes the Rouse Band Saw. Just circle this number on the postage-paid return card. We do the rest. No obligation.

PRINTING EQUIPMENT Engineer, Sept.
1276 West Third Street, Cleveland, Ohio.

Without obligation please have the manufacturers send me literature or information circled below. (These numbers correspond to numbers on descriptive paragraphs).

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42								

NAME .....

TITLE..... DEPT.....

FIRM NAME.....

.....

STREET .....

CITY ..... STATE.....

Pressroom

17 NUMBERING MACHINES— Wetter Numbering Machine Company wants to send you full details and description of its machines for use on Rotary and flat bed presses. Circle this number on the coupon.

18 PAPER —"To get the most out of your printing, investigate Champion Paper, the foundation for good printing." Champion Paper & Fibre Co. offers information on its complete line of papers. Gratis.

19 OFFSET PRESS — "To produce the best in Offset, you must have modern equipment." Harris-Seybold-Potter Co. offers interesting reading matter on its press — also information on Harris Litho chemicals.

20 INK — "Zephyr Blacks, for flatbed presses, are favorites across the nation. Drying speed is amazing." Sinclair & Valentine offers descriptive folder. Send for it

21 ROLLERS — "Durability, concentricity, economical, easily washed." Rapid Roller Company offers information on "Tomorrow's Roller Today." Send for it.

22 INKS — Use the post-card to get color chart and selector of Flint inks. Offered by the Howard Flint Ink Company.

23 PRESS — ATF this month offers a five-color press sheet from the ATF No. 2 Kelly. Post-card brings it. Just circle this number and mail.

24 HOE offers data on its pasters, folders, reels and tensions. Circle this number on the coupon to get latest information on Hoe equipment.

25 PRESS — ATF "Little Giant" press sheet and details on this press will be mailed to you. Just circle this number on the post-card.

26 PRINTING PRESS BLANKETS — Tingue, Brown & Company enumerate the various kinds of press blankets supplied by them. Prices and samples will be sent to you. No obligation.

27 LUBRICATION — "There is a Blanchard Pulsator System for lubricating every type and size of printing press." Bulletin B-30 will be mailed to you promptly.

28 AUTOPASTER — Complete details are available. Offered by Wood Newspaper Machinery Corp. Use the coupon to keep up to date on modern newspaper equipment and machinery.

29 ROLLERS — Sam'l Bingham's Son Mfg. Co. will send you list and specifications of its complete line of printers' rollers. Circle this number on the card.

Stereotype Dept.

30 STEREOTYPE SUPPLIES — Eastern Newspaper Supply offers to send you latest complete catalog of supplies. Learn more about "Flecto" Gummed backing felt, "Plate-Tak" Cut Mounting Tape, and "Tru-Mold" Cork Molding Blanket. Gratis.

31 DRY MAT — Burgess states, "The ability of the stereotyper shows to best advantage when he uses Burgess Chrome Mats." Circle this number on the coupon to get samples and booklet describing Burgess Mats.

32 CATALOG of supplies for the printer will be mailed to you by American Publishers Supply. Contains many useful products used daily in stereotype departments. Coupon brings it to you.

33 DRY MATS — Wood Flong offers sample lot of its dry mats. "Wood Mats give white highlights—solid blacks—true halftones and middletones — deep molds — clean plates."

34 MASTER FORMER —"Mechanize your dry mat shrinkage with automatic Vacuum control." Sta-Hi Corporation offers to mail you booklet describing the Sta-Hi Master Former. Coupon brings it to you.

35 MAT CASTER — "For better plates and faster casting, investigate the Hammond Easykaster "8", equipped with or without 800 pound valve-controlled melting pot." Literature, prices and terms offered by Hammond Machinery Builders, Inc. No obligation, just fill out the coupon.

36 DRY MAT — Circle this number on the coupon to receive booklet entitled, "How to get the most from your dry mat and stereo expenditures." Offered by Certified Dry Mat Corp.

Miscellaneous

37 PRINTING EQUIPMENT MOTORS — Kimble Electric describes the modern design of its motors, built especially for the printer, in a booklet which will be mailed to you without obligation. Coupon brings it.

38 ZINC — "Dependable plates mean better engravings and more work for letterpress." Atlantic Zinc Works will send you booklet entitled "Getting Down To Zinc Facts."

39 KNIFE GRINDER — Seybold Machine Company announces a new "precision knife grinder to grind any straight edge knife." Further data offered. Circle this number on the post-card.

40 ENGRAVING EQUIPMENT — Interested in receiving a complete catalog of Douthitt chemicals, supplies, and equipment? Use the postage-paid return card.

41 AIRIDIFIER — "Cleans moisture, oil, and dirt from your air lines. Increases efficiency, life and service of your air operated equipment." Logan Engineering offers Bulletin 939. Send for it. No obligation.

42 Interested in receiving literature and facts on sheet and roll-fed gravure presses and platemaking equipment? Several reputable manufacturers offer free details. Just circle this number on the post-card.

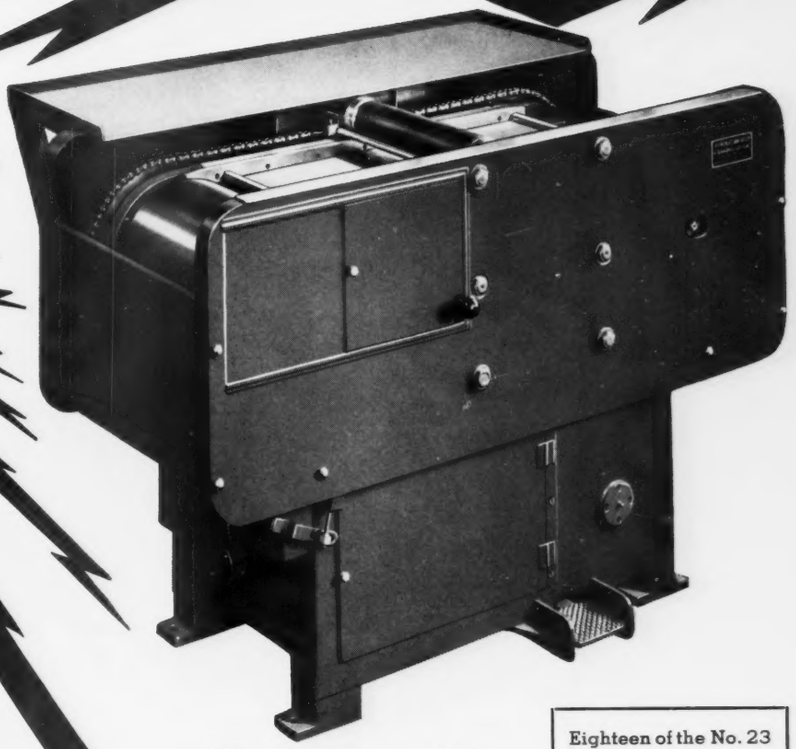
Postage Will be Paid by Addressee

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 2285 (SEC. 510 P. L. & R.) CLEVELAND, OHIO

PRINTING EQUIPMENT *Engineer*
1276 West 3rd Street
Cleveland, Ohio

No Postage Stamp Necessary If Mailed in the United States

GUARANTEED TO MAKE PROOFS *Faster*



All controls are convenient to the operator.

Eighteen of the No. 23 Vandercooks are used in the U. S. Government Printing Office.

No. 23 Vandercook ELECTRIC Proof Press prints proofs from type and forms in galleys at the rate of 40 a minute.

Small advertisements, book and magazine pages, tabloid size newspaper pages, or five column full length advertisements are printed with equal facility.

No. 23 Vandercook ELECTRIC Proof Press has every convenience for speedy operation. Hand movement in feeding is reduced to a minimum. Control is practically instantaneous. Speed is easily regulated. Galleys may be changed quickly.

The No. 23 Vandercook takes a form 14"x27½". Its companion machine, the No. 22 Vandercook, takes a form 8"x15¾". A circular giving complete information and prices will be mailed at your request. Write for your copy.

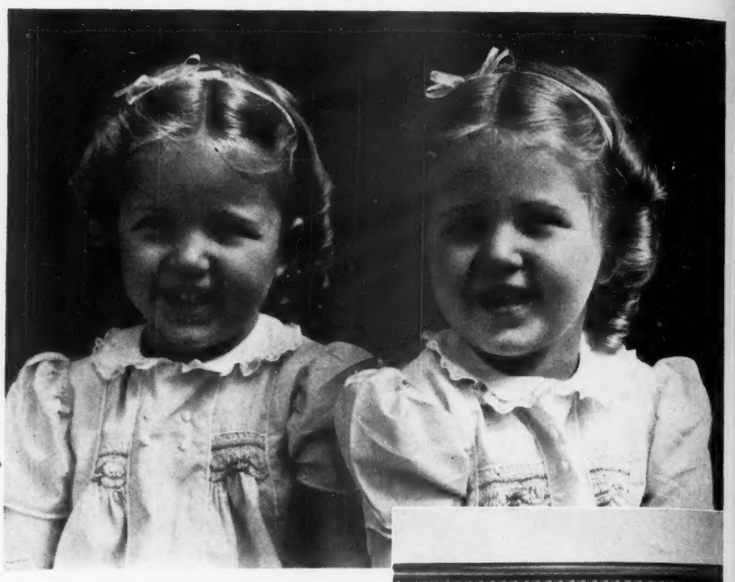
Inking system affords ample distribution over large forms.

VANDERCOOK & SONS

Main Office and Factory
908 N. Kilpatrick Ave., Chicago

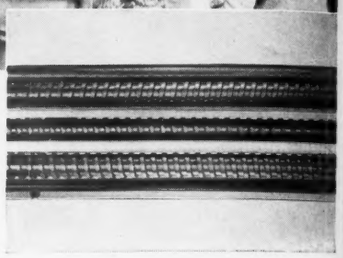
Eastern Branch
220 E. 45th St., New York City

Canada: SIMMONS LIMITED, Toronto, Montreal, Winnipeg, Vancouver



Introducing...

TWINS in non-mixer typesetting machine distribution



TWIN DISTRIBUTION enables an operator to change from one typesetting machine magazine to another by the flip of a finger. Previous to the introduction of the Universal Intertype line, this time-saving feature was obtainable only on *mixer* machines. Now it is available—on the Intertype exclusively—on *non-mixer* models. Furthermore, these *non-mixer* Intertypes are *convertible* into *mixers*. This feature constitutes valuable insurance on your typesetting machine investment against loss due to unforeseen requirements which the future may bring. Investigate the Universal Intertype. And ask for particulars about its many exclusive profit-making features.

INTERTYPE CORPORATION, *360 Furman Street*, BROOKLYN

HOW TWIN DISTRIBUTION SAVES TIME

When changing from one magazine to another on twin-distributor *non-mixer* Intertypes, the operator need not wait, as is necessary on other non-mixer machines, until the last line he has set has been distributed. As soon as his last line has left the distributor box, he can go right ahead with composition in another font of matrices.

This exclusive Intertype feature saves a substantial amount of time. Other Universal Intertype features include . . .

SIXTY-ONE available combinations of equipment, with font distinguishing systems adaptable to existing Intertype machines, both mixers and non-mixers.

AUTOMATIC channel entrance operation. (This feature is standard equipment on most Universal Models.)

NEW FEATURES for insuring better slugs, including Intertype's exclusive baffle mouthpiece.

POWER-OPERATED magazine shift, automatic quadding and centering device, six-mold disk with automatic ejector blade changes, Mohr Intertype saw, and other extra equipment features which promote extra profits in type composition.

Step ahead with INTERTYPE

EGMONT FAMILY